CVP-G700
RMT-7

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

Remote commander is available as a unit. But as individual parts the battery case lid of commander is only avaiable.

Color Video Printer

SPECIFICATIONS

Printing system	Sublimation heat transfer printing
Number of picture elements	540 (V) × 700 (H) (for full-size printout)
Printing size	Approx. 76 × 100.5 mm (3 × 4 inches)
Total gradation	256 levels (8 bits) each for R, G, and B
Printing time	Approx. 70 seconds
TV signal	PAL colour system
Input/output connectors	VIDEO input (pin jack) × 2 (front and rear) 1 Vp-p, 75 ohms (unbalanced), sync negative S VIDEO input (4-pin mini DIN) automatically selectable × 2 (front and rear) Y: 1 Vp-p 75 ohms (unbalanced), sync negative C: 0.3 Vp-p (colour burst) 75 ohms (unbalanced) VIDEO output (pin jack) × 1 1 Vp-p, 75 ohms (unbalanced), sync negative S VIDEO output (4-pin mini DIN) × 1 Y: 1 Vp-p 75 ohms (unbalanced), sync negative C: 0.3 Vp-p (colour burst) 75 ohms (unbalanced)
Colour ribbon and print paper	Colour ribbon used exclusively for CVP-G700 Print paper used exclusively for CVP-G700 (100 × 140 mm (4 × 5 5/8 inches) sheets)
Power requirements	220 – 240 V AC, 50/60 Hz

— Continued on next page —

MICROFILM

COLOR VIDEO PRINTER
SONY®

Power consumption	120 W (in printing), 20 W (not in printing)
Operating temperature	5°C to 35°C (40°F to 95°F)
Operating humidity	30% to 80%
Dimensions	Approx. 430 × 109 × 375 mm (w/h/d) excluding protruding parts (17 × 4 3/8 × 14 7/8 inches)
Weight	Approximately 8.3 kg. (18 lbs 5 oz)
Accessories supplied	Paper tray (1) Video printing pack (1) Remote commander RMT-7 (1) Size AA (R6) batteries (2) AC power cord (1) Video connecting cables (2) (Depending on where you purchase the printer, only one video connecting cable is supplied.)
Optional supplies	Video printing packs VPM-30STA, VPM-90STA White sticker printing pack VPM-30WSA Video connecting cable VMC-1S, YC-15V

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TABLE OF CONTENTS

Section Title Page

1. GENERAL

What is the Color Video Printer ········· 5
Location and Function of Parts nad Controls ········· 7
Accessories ········· 8
Screen Messages and Menus ········· 9
Precautions ········· 10
Connecting the Color Video Printer ········· 12
Using the Remote Commander ········· 13
Loading the Color Ribbon Cassette ········· 15
Loading the Print Paper ········· 16
Printing a Full-Size Image ········· 18
Printing TV Broadcast Pictures (If you have no video equipment) ········· 20
Making a Variety of Printouts ········· 22
Printing with a Date ········· 27
Printing with a Title ········· 28
Setting the Print Quantity ········· 29
Adjusting the Picture Quality of Printouts ········· 29
Storing one Image while Printing Another ········· 30
About Capture (memory) Mode ········· 32

2. DISASSEMBLY

2-1. Cabinet Section Removal ········· 33
2-2. Rear Frame and Power Supply Block Removal ········· 33
2-3. VA-69 Board Removal ········· 34
2-4. MC-80 Board Removal ········· 34
2-5. Mechanism Section Removal ········· 35

3. MECHANISM SECTION REPLACEMENT

3-1. Head Driving Motor Replacement ········· 36
3-2. Limiter Assembly Replacement ········· 37
3-3. Platen Driving Motor Replacement ········· 38
3-4. Worm Wheel Replacement ········· 39
3-5. Brake Replacement ········· 40
3-6. Change Gear Replacement ········· 40
3-7. Cam Gear and Head Idler Replacement ········· 41
3-8. Idler Gear Replacement ········· 42
3-9. Paper Feed Roller Assembly Replacement ········· 42
3-10. Paper Ejecting Roller Replacement ········· 43
3-11. Platen Replacement ········· 44

Section Title Page

4. EACH SENSOR FUNCTION

4-1. Each Sensor Position ········· 45

5. DIAGRAMS

5-1. Circuit Boards Location ········· 46
5-2. Overall Block Diagram ········· 47
5-3. Video (Analog) Block Diagram ········· 51
5-4. Video (Digital) Block Diagram ········· 55
5-5. Head Control Block Diagram ········· 58
5-6. System Control Block Diagram ········· 61
5-7. Power Block Diagram ········· 63

6. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

6-1. Frame Schematic Diagram ········· 65
6-2. Printed Wiring Boards and Schematic Diagrams ········· 69
- VA-69 Board ········· 70
- MC-80 Board ········· 95
- HC-10 Board ········· 121
- SY-50, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW-10, PTC-8, PTC-9, PTC-10, PTC-11, S-12 Boards ········· 129
- KY-12, CK-51, CK-54, CK-55, PW-97 Boards ········· 137
- Power Block Board ········· 144

6-3. Semiconductors ········· 150

7. EXPLODED VIEWS

7-1. Cabinet Assembly ········· 152
7-2. Chassis Assembly ········· 153
7-3. Mechanism Chassis Assembly (1) ········· 154
7-4. Mechanism Chassis Assembly (2) ········· 155
7-5. Mechanism Chassis Assembly (3) ········· 156

8. ELECTRICAL PARTS LIST ········· 157

Section Title Page

9. ADJUSTMENTS

9-1. Preparations Before Adjustments 179
  9-1-1. Equipments to be Used 179
  9-1-2. Connecting the Equipments 179
  9-1-3. Checking the Input Signal 180
  9-1-4. Test Mode 181
9-2. Power Supply Section Adjustments 182
  1. 5V Voltage Adjustment (Power supply block) 182
  2. 12V System Input Voltage Adjustment (Power supply block) 182
  3. Power Supply Voltage Checks (Power supply block) 182
  4. Head Power Supply Adjustment (Power supply block) 182
  4-1. 3V Reference Voltage Adjustment 182
  4-2. Minimum and Maximum Head Voltage Values Adjustments 182
  5. Head Voltage Adjustment (Power supply block) 183
9-3. Mechanism Block and System Control Circuit Adjustments 184
  1. Replacing the Thermal Head 184
  2. Head End Point Position Check 184
  3. Ribbon Code Sensor Adjustment (SY-50 board) 185
  4. Paper Set Sensor DNP Adjustment (SY-50 Board) 185
  5. FG Sensor Adjustment (SY-50 Board) 186
  6. Line Pulse Adjustment (SY-50 board) 186
9-4. Video Circuit Adjustment 187
  1. THRU VIDEO Output Level Adjustment (VA-69 board) 187
  2. THRU Y Output Level Adjustment (VA-69 Board) ... 187
  3. THRU CHROMA Output Level Adjustment (VA-69 board) 187

Section Title Page

  4. Y/C Mix Ratio Adjustment (VA-69 board) 188
  5. Y/C Separation Y Level Adjustment (VA-69 board) 188
  6. Y/C Separation CHROMA Level Adjustment 189
  7. Decoder Free-run Frequency Adjustment (VA-69 board) 189
  8. Sync Generator Free-run Frequency Adjustment (VA-69 board) 189
  9. INT Sync Generator FH ERROR Adjustment (VA-69 board) 189
  10. AFC Error Adjustment (VA-69 board) 189
  11. AFH Phase Adjustment (VA-69 board) 190
  12. U Adjustment (VA-69 board) 190
  13. Decoder HUE/COLOR Adjustment (VA-69 board) .. 191
  13-1. Decoder HUE Adjustment 191
  13-2. Decoder Color Adjustment (VA-69 board) 191
  14. Decoder Output Level Adjustment (VA-69 board) ... 192
  15. AGC Level Adjustment (VA-69 board) 192
  16. CHROMA UP Adjustment (VA-69 board) 193
  17. Red Pedestal Level Adjustment (VA-69 board) 193
  18. Blue Pedestal Level Adjustment (VA-69 board) 194
  19. Green Pedestal Level Adjustment (VA-69 board) ... 194
  20. Green Bright Level Adjustment (VA-69 board) 195
  21. Green Picture Level Adjustment (VA-69 board) 195
  22. S/V Ratio Adjustment (VA-69 board) 196
  23. Black/White Balance and Carrier Balance Adjustments (VA-69 board) 196
  24. Burst Level Adjustment (VA-69 board) 197
  25. B–Y, R–Y Level Adjustments (VA-69 board) 197
  26. Chroma Level Adjustment (VA-69 board) 197
  27. Burst Position Adjustment (VA-69 board) 198
  28. OSC Adjustment (MC-80 board) 198
  29. G Channel D/A Output Adjustment (MC-80 board) 199
  30. Memory Signal Level Adjustment (VA-69 board) 199
9-5. Arrangement Diagram for Adjustment Parts 200

SECTION 1
GENERAL

This section is extracted from instruction manual.

Introduction
What is the Colour Video Printer

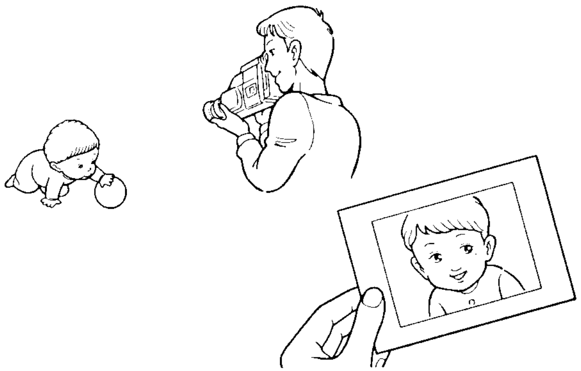
What can the printer do

With the colour video printer, you can print the pictures taken with video equipment and the pictures broadcast on TV. Operation is very simple. Just press the CAPTURE button to store the image you want to print just as you would press the shutter when you take a photo. Then press the PRINT button to get a natural-coloured, vivid printout.

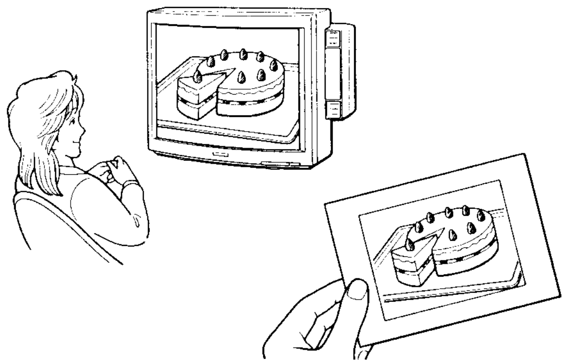
For printing, refer to "Printing a Full-Size Image" on page 34.

Note
The CVP-G700 is compatible only with the PAL video sources.
You cannot make prints directly from the SECAM TV programs in France.

Printing pictures played back on video equipment



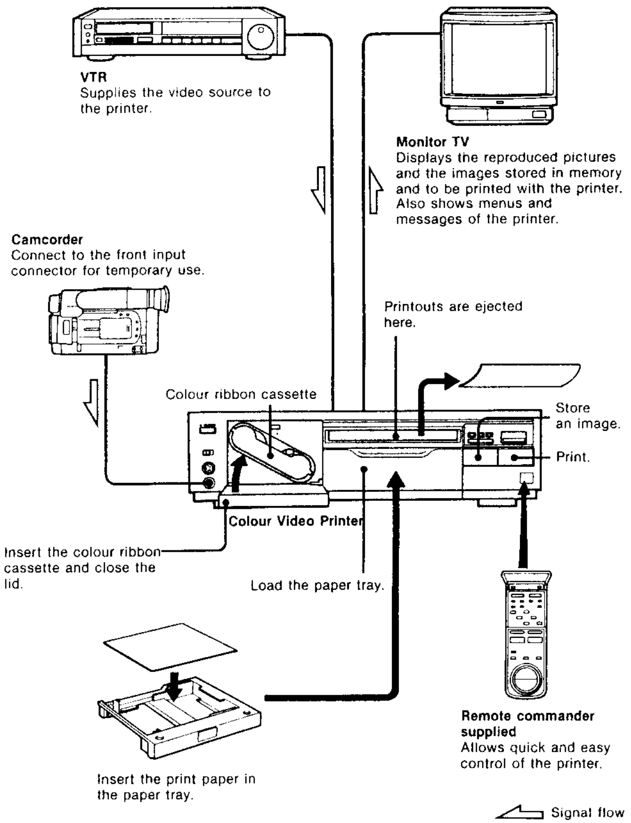
Printing TV broadcast pictures



How does the printer work

Connect the video source (VTR, camcorder, or laser disc player, etc.) and the video display (TV or monitor) to the printer. Use the devices equipped with VIDEO and/or S VIDEO input/output connectors. You cannot use devices with only aerial connectors.

For connection, refer to "Connecting the Colour Video Printer" on page 22.



VTR
Supplies the video source to the printer.

Monitor TV
Displays the reproduced pictures and the images stored in memory and to be printed with the printer. Also shows menus and messages of the printer.

Camcorder
Connect to the front input connector for temporary use.

Printouts are ejected here.

Colour ribbon cassette

Store an image.

Print.

Colour Video Printer

Insert the colour ribbon cassette and close the lid.

Load the paper tray.

Insert the print paper in the paper tray.

Remote commander supplied
Allows quick and easy control of the printer.

Printing TV broadcast pictures only
Only a TV with VIDEO or S VIDEO input/output connectors can be used. For details, refer to "Printing TV Broadcast Pictures" on page 38.

What is the Colour Video Printer

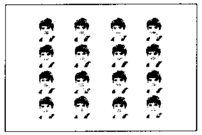
With the colour video printer, you can make a variety of printouts.

Basic printout in full size

An image from the video equipment is printed in full size. (page 34)

Printout of the same image in 1/4 size or 1/16 size

Four of the same images, each in 1/4 size, are printed with white divisions. (page 44)



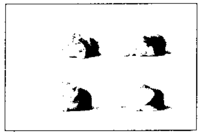
Sixteen of the same images, each in 1/16 size, are printed with white divisions. (page 44)

Printout of different images in 1/4 size or 1/16 size

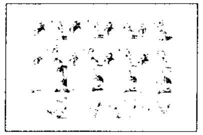
Four different images, each in 1/4 size, are printed without white divisions. (page 46)

Sixteen different images, each in 1/16 size, are printed without white divisions. (page 46)

Printout of strobe images in 1/4 size or 1/16 size



Four strobe images (sequential views of a moving object), each in 1/4 size, are printed without white divisions. (page 48)



Sixteen strobe images, each in 1/16 size, are printed without white divisions. (page 48)

Printout with multiple insets

A basic printout is printed with multiple insets of 1/4-size and/or 1/16-size images. (page 50)

Printout with a caption

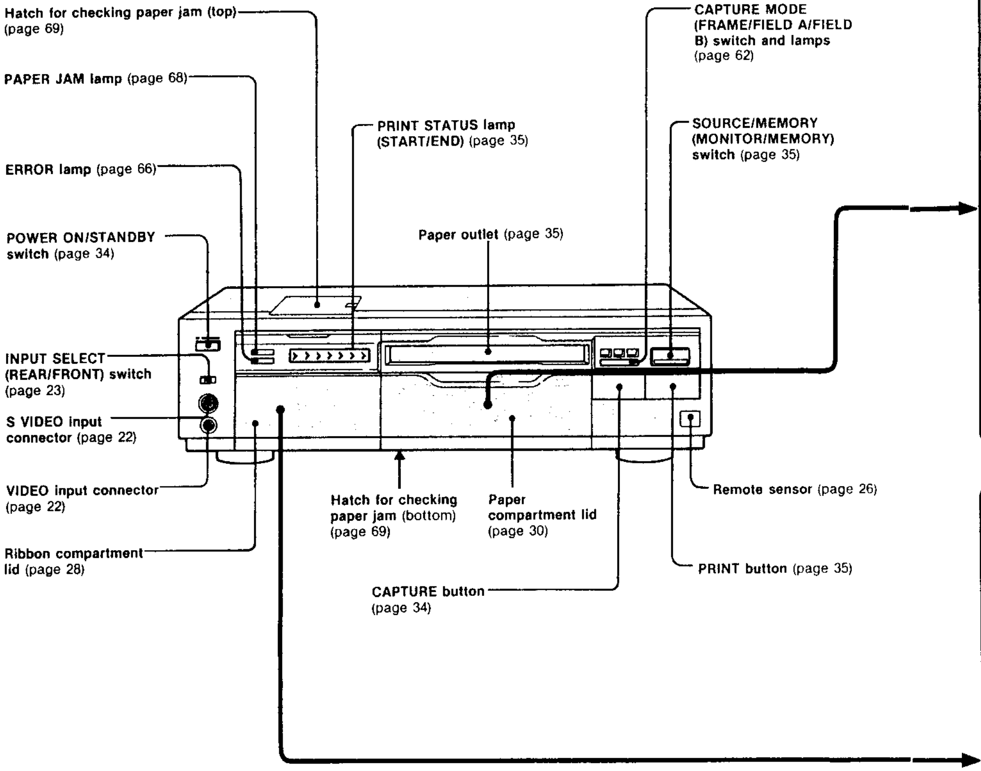
A basic printout is printed with a date. (page 52)

Happy birthday! 7.4 92

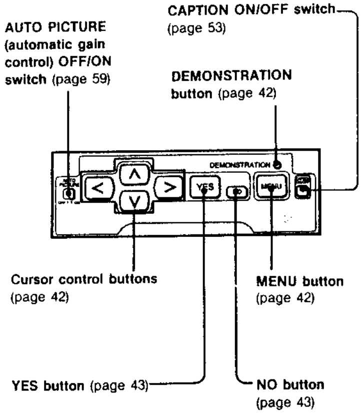
A basic printout is printed with a title of up to 40 letters, numbers, or marks. (page 54)

For explanation of the use of each part, refer to the pages indicated in ( ).

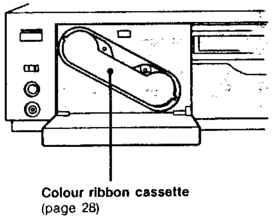
Main Unit Front


Hatch for checking paper jam (top) (page 69)
PAPER JAM lamp (page 68)
ERROR lamp (page 66)
POWER ON/STANDBY switch (page 34)
INPUT SELECT (REAR/FRONT) switch (page 23)
S VIDEO input connector (page 22)
VIDEO input connector (page 22)
Ribbon compartment lid (page 28)
PRINT STATUS lamp (START/END) (page 35)
Paper outlet (page 35)
Hatch for checking paper jam (bottom) (page 69)
Paper compartment lid (page 30)
CAPTURE button (page 34)
CAPTURE MODE (FRAME/FIELD A/FIELD B) switch and lamps (page 62)
SOURCE/MEMORY (MONITOR/MEMORY) switch (page 35)
Remote sensor (page 26)
PRINT button (page 35)

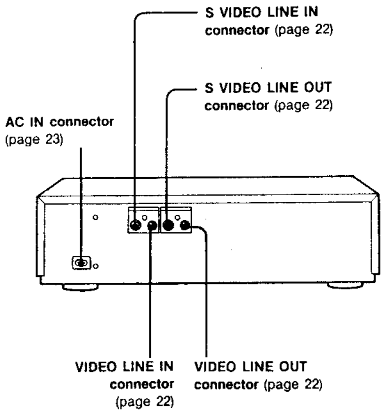
When the paper compartment lid is open


AUTO PICTURE (automatic gain control) OFF/ON switch (page 59)
CAPTION ON/OFF switch (page 53)
DEMONSTRATION button (page 42)
DEMONSTRATION
YES
MENU
Cursor control buttons (page 42)
MENU button (page 42)
YES button (page 43)
NO button (page 43)

When ribbon compartment lid is open

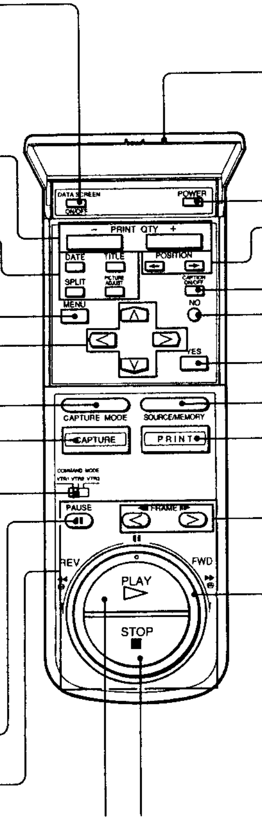

Colour ribbon cassette (page 28)

Rear


S VIDEO LINE IN connector (page 22)
S VIDEO LINE OUT connector (page 22)
AC IN connector (page 23)
VIDEO LINE IN connector (page 22)
VIDEO LINE OUT connector (page 22)

Remote commander

The buttons and switches on the commander have the same function as those with the same names on the unit. With the remote commander, you can also control the tape transport of Sony video equipment.



DATA SCREEN ON/OFF button
When you want to see the image hidden behind the screen messages, press this button to erase the screen messages. You operate the printer in the same way, whether or not the messages appear. (Screen menu cannot be erased.)

PRINT QTY (quantity) –/+ buttons
Press the – button to decrease the print quantity and the + button to increase it.

Sub-menu buttons (DATE, TITLE, SPLIT and PICTURE ADJUST)
Displays sub-menus immediately on the screen.

MENU button

Cursor control buttons

CAPTURE MODE switch

CAPTURE button

COMMAND MODE switch
You can control Sony video equipment:
VTR1: Sony Beta VTR
VTR2: Sony 8mm VTR and camcorder
VTR3: Sony VHS VTR
Depending on the model, some functions cannot be controlled.

PAUSE button

Tape transport control buttons
Controls the tape transport of the video equipment.

PLAY button **STOP button**

Cover

POWER switch

POSITION ←/→ buttons
Moves the cursor to the desired position in the TITLE menu.

CAPTION ON/OFF switch

NO button

YES button

SOURCE/MEMORY button

PRINT button

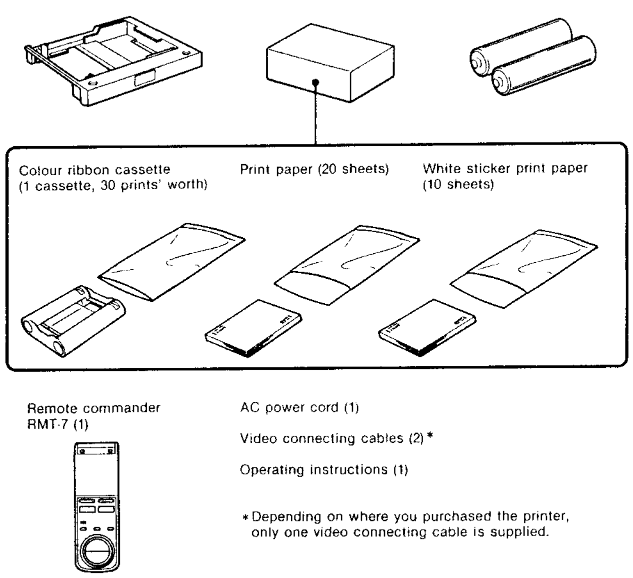
Frame-by-frame buttons

Shuttle ring
In the stop mode:
Turn to the extreme right and release for fast forward, turn to the extreme left and release for fast rewind.
In the playback and pause modes:
Turn clockwise for FWD playback and counter-clockwise for REV playback. Depending on the angle, the speed varies.
Turn to the extreme right for FWD picture search and to the extreme left for REV picture search.

Supplied accessories

The printer is packed together with the following accessories. Check that nothing is missing from your package.

Notes
- Retain the original carton and packing materials in case you have to transport this unit in the future.
- Retain the original bags containing print paper and colour ribbon. They are the ideal container for storing partially used print paper and colour ribbon for an extended period of time.



Paper tray (1)
Video printing pack (1)
Size AA (R6) batteries (2)
Colour ribbon cassette (1 cassette, 30 prints' worth)
Print paper (20 sheets)
White sticker print paper (10 sheets)
Remote commander RMT-7 (1)
AC power cord (1)
Video connecting cables (2)*
Operating instructions (1)

*Depending on where you purchased the printer, only one video connecting cable is supplied.

Optional accessories (video printing packs)

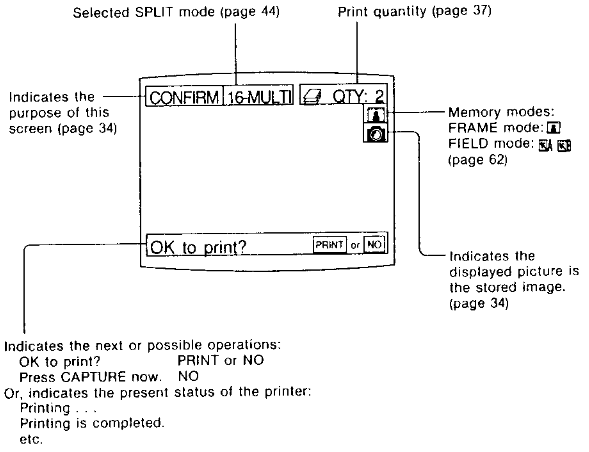
You need print paper and colour ribbon cassette for printing. The print paper and colour ribbon cassette are not re-usable. Once they are used, replace with new ones. Video printing packs containing print paper and colour ribbon cassette are available separately. Video cables for connecting the printer with video equipment are also available.

Video printing pack VPM-30STA
(One cassette of colour ribbon and 30 sheets of regular print paper for 30 prints)
Video printing pack VPM-90STA
(One cassette of colour ribbon and 90 sheets of regular print paper for 90 prints)
White sticker printing pack VPM-30WSA
(One cassette of colour ribbon and 30 sheets of sticker print paper for 30 prints)
Video connecting cable VMC-1S (For VIDEO signals)
Video connecting cable YC-15V (For S VIDEO signals)

Note
Use the video printing packs recommended for this printer only. If you use different types of printing packs, printing may not be made properly or malfunctions may occur.

Screen messages

Screen messages show you the present status of the printer and suggest the next step of operation.
Menus on the screen guide you through advanced operations such as making a variety of printouts, adjusting colour, and setting print quantity.


CONFIRM
16-MULTI
QTY: 2
OK to print?
PRINT or NO

Selected SPLIT mode (page 44)

Print quantity (page 37)

Indicates the purpose of this screen (page 34)

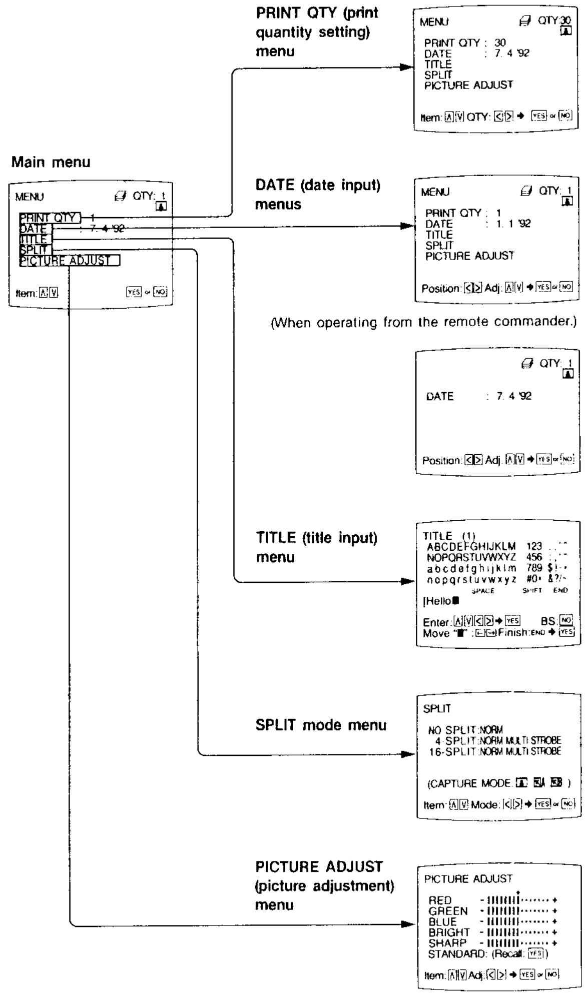
Memory modes:
FRAME mode: ▣
FIELD mode: ▣ ▣
(page 62)

Indicates the displayed picture is the stored image. (page 34)

Indicates the next or possible operations:
OK to print? PRINT or NO
Press CAPTURE now. NO
Or, indicates the present status of the printer:
Printing . . .
Printing is completed.
etc.

Menus

The menus for advanced operations have a tree structure.


MENU
QTY: 1
PRINT QTY 1
DATE : 7. 4 '92
TITLE
SPLIT
PICTURE ADJUST
Item: ▲▼
YES or NO
MENU
QTY:30
PRINT QTY : 30
DATE : 7. 4 '92
TITLE
SPLIT
PICTURE ADJUST
Item: ▲▼ QTY: ◀▶ ➔ YES or NO
MENU
QTY: 1
PRINT QTY : 1
DATE : 1. 1 '92
TITLE
SPLIT
PICTURE ADJUST
Position: ◀▶ Adj: ▲▼ ➔ YES or NO
QTY: 1
DATE : 7. 4 '92
Position: ◀▶ Adj. ▲▼ ➔ YES or NO
TITLE (1)
ABCDEFGHIJKLM 123
NOPQRSTUVWXYZ 456
abcdefghijklm 789 $!-
nopqrstuvwxyz #0 &?/-
SPACE SHIFT END
[Hello■
Enter: ▲▼◀▶ ➔ YES BS: NO
Move "■" : ←→ Finish: END ➔ YES
SPLIT
NO SPLIT :NORM
4-SPLIT :NORM MULTI STROBE
16-SPLIT :NORM MULTI STROBE
(CAPTURE MODE ▣ ▣ ▣)
Item: ▲▼ Mode: ◀▶ ➔ YES or NO
PICTURE ADJUST
RED
GREEN
BLUE
BRIGHT
SHARP
STANDARD: (Recall: YES)
Item: ▲▼ Adj: ◀▶ ➔ YES or NO

Main menu

PRINT QTY (print quantity setting) menu

DATE (date input) menus

(When operating from the remote commander.)

TITLE (title input) menu

SPLIT mode menu

PICTURE ADJUST (picture adjustment) menu

Precautions

On safety

- Operate the printer on 220–240 V AC, 50/60 Hz only.
- Be careful not to set or drop any heavy objects on the power cord, or to damage the cord in any way. Never operate this printer with a damaged power cord.
- Should any solid object or liquid fall into the cabinet, unplug the printer and have it checked by qualified personnel before operating it any further.
- Never disassemble the printer.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- When the printer is not going to be used for an extended period, disconnect the power cord from the wall outlet.
- Do not handle the printer roughly.
- To reduce the risk of electric shock, always unplug the printer from electrical outlet before cleaning and servicing the printer.

On moisture condensation

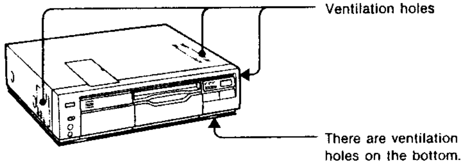
If the printer is brought directly from a cold place to a warm place or placed in an extremely warm or humid room, moisture may condense inside the unit. In such cases the printer will probably not work properly, and may even develop a fault if you persist in using it. If moisture condensation forms, turn off the power and do not use the printer for at least one hour.

On cleaning

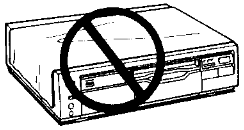
Clean the cabinet, panel and controls with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

On installation

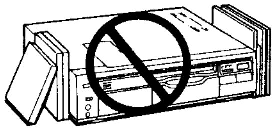
- Avoid placing the unit in a location subject to:
  - —vivration
  - —high humidity
  - —excessive dust
  - —direct sunlight
  - —extremely high or low temperatures
- Do not use electronic equipment near the unit. The unit will not work properly in electromagnetic fields.
- The unit is designed to operate horizontally. Never attempt to operate the printer in a tilted position.
- Do not place heavy objects in the printer.
- Leave enough room around the printer so that the ventilation holes are not blocked. Blacking these holes may cause internal heat build-up.



Do not cover the unit with cloth or other materials.



Do not block the sides of the unit with books, etc.



Setting Up

This chapter covers the following topics:
- Connecting the Colour Video Printer
- Using the Remote Commander
- Loading the Colour Ribbon Cassette
- Loading the Print Paper

Setting Up

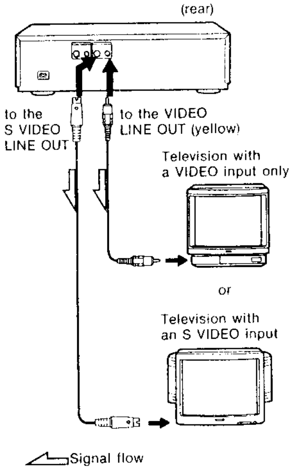
Connecting the Colour Video Printer

Before you begin

- Prepare the units (TV, VTR, etc.) with S VIDEO or VIDEO input/output connectors. (You cannot use the units with aerial connectors only.)
- Do not connect the AC power cord to the printer and the wall outlet until all of the other connections are complete.
- Turn off the power of the other equipment you will connect the printer to.
- For connection, also refer to the operating instructions of other equipment you will connect the printer to.

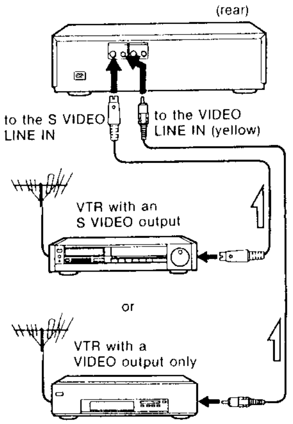
1 Connect the printer to the television/monitor.

When your television/monitor has both S VIDEO and VIDEO input connectors, use the S VIDEO connector.


(rear)
to the S VIDEO LINE OUT
to the VIDEO LINE OUT (yellow)
Television with a VIDEO input only
or
Television with an S VIDEO input
Signal flow

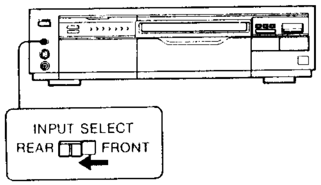
2 Connect the printer to the video equipment.

When your video equipment (VTR, camcorder, laser disc player, etc.) has both S VIDEO and VIDEO input connectors, use the S VIDEO connector.

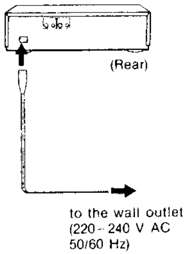

(rear)
to the S VIDEO LINE IN
to the VIDEO LINE IN (yellow)
VTR with an S VIDEO output
or
VTR with a VIDEO output only

3 Set the INPUT SELECT switch on the front panel of the printer to "REAR" (when using the rear input connectors).

(When using the front input connectors, set it to "FRONT.")


INPUT SELECT
REAR
FRONT

4 Connect the AC power cord to the printer and the wall outlet.


(Rear)
to the wall outlet (220 - 240 V AC 50/60 Hz)

Note

Operate the printer only on 220 - 240 V AC 50/60 Hz.

S VIDEO connectors and VIDEO connectors

The printer has both S VIDEO and VIDEO connectors. When the video/television unit that the printer will be connected to has both types of connectors, use the S VIDEO connector. You can enjoy higher quality pictures.

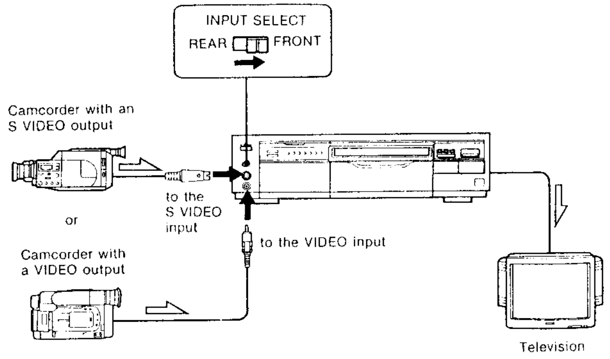
If you use both S VIDEO and VIDEO input connectors of the printer simultaneously, the input circuit will select S VIDEO input signals automatically.

Even if you have no video equipment

You can print TV broadcast pictures when your TV has S VIDEO or/and VIDEO input/output connectors. For details, refer to "Printing TV Broadcast Pictures" on page 38.

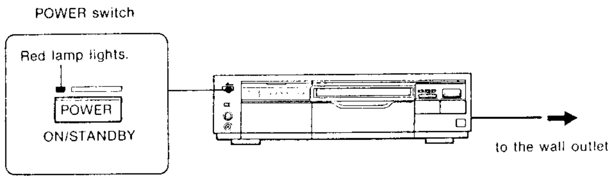
Connecting the video camera temporarily

Use the front input connector to connect a video camera, camcorder, etc., temporarily. You can then connect or disconnect the equipment easily. Set the INPUT SELECT switch to "FRONT".


INPUT SELECT
REAR
FRONT
Camcorder with an S VIDEO output
to the S VIDEO input
or
Camcorder with a VIDEO output
to the VIDEO input
Television

Watching video and TV after connecting to the printer

As long as you leave the AC power cord of the printer connected to the wall outlet, you can enjoy watching video and TV as usual, even if the printer itself has been turned off. Whenever the unit is connected to the AC power source, the POWER lamp lights in red.

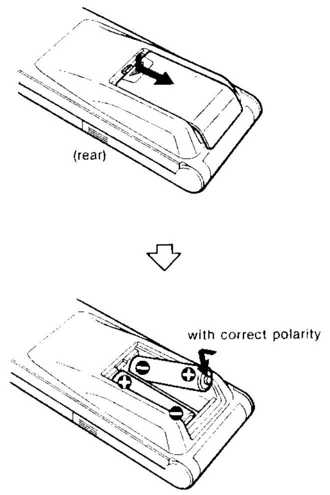

POWER switch
Red lamp lights.
POWER
ON/STANDBY
to the wall outlet

Using the Remote Commander

The supplied remote commander has some special buttons and switches that the main unit does not have. Those buttons and switches, as well as those of the same function with the main unit, make the operation even quicker and easier.

Installing batteries

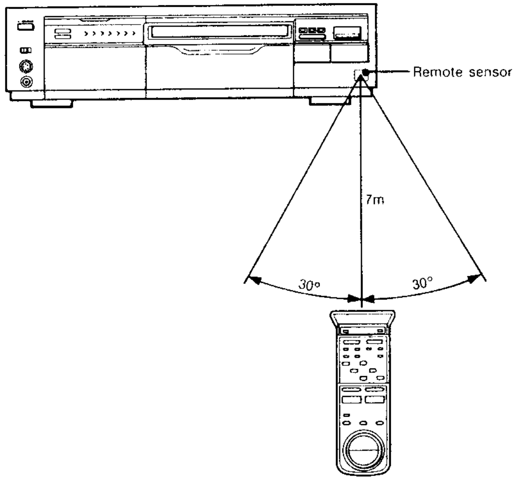
Insert two supplied size AA (R6) batteries into the remote commander.


(rear)
with correct polarity

After inserting the batteries, slide the lid back onto the remote commander.

Controlling the printer with the remote commander

Point the head of the remote commander toward the remote sensor on the printer. You can operate the printer with the remote commander within 7m of the printer.



How long is the battery life?
In normal operation, batteries will last for **about six months.** If the operating range of the commander becomes **noticeably** short, replace the batteries with new ones.

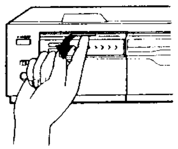
Notes on handling the remote commander
- Do not drop the commander or immerse it in water or other liquids.
- Keep the remote sensor of the printer away from the direct sunlight or the strong light of lighting equipment.
- To avoid malfunction, do not simultaneously depress two or more buttons.

Notes on handling the batteries
- Remove the batteries from the remote commander when you are not going to use the commander for an extended period of time. If you leave them installed, the batteries may leak.
- If the batteries should leak, wipe away the leakage in the battery case thoroughly, and then insert new batteries.
- Be sure to insert the batteries with correct polarity.
- Do not mix used and new batteries.
- Do not recharge the batteries.
- Do not mix batteries of different types.

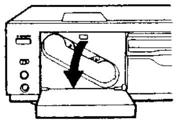
Loading the Colour Ribbon Cassette

Before you begin
Make sure that you use the colour ribbon cassette recommended for this printer only.

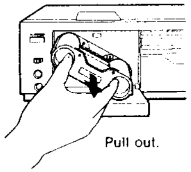
1 Open the ribbon compartment lid.



Pull down with the tab.



To remove the colour ribbon cassette
When you replace the used colour ribbon cassette with a new one, remove the used colour ribbon cassette from the ribbon compartment.

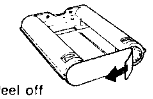


Pull out.

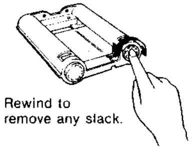
Note
The colour ribbon is not reusable. When it is completely used, replace it with a new one.

2 Remove any slack from the colour ribbon.

When you use a new color ribbon cassette
Peel off the stopper and rewind the colour ribbon fully.

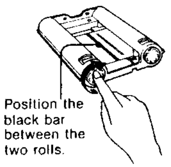


Peel off the stopper.



Rewind to remove any slack.

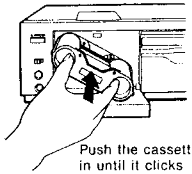
When you use a partially used colour ribbon cassette
Wind the colour ribbon until the black bar is positioned between the two rolls of the cassette.



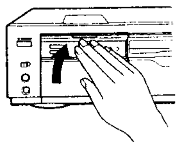
Position the black bar between the two rolls.

Note
If you insert a slack colour ribbon cassette into the printer, it may be damaged or even cause malfunction.

3 Insert the colour ribbon cassette firmly and close the ribbon compartment lid.

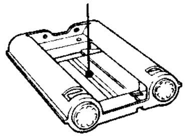


Push the cassette in until it clicks into place.

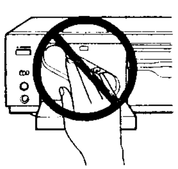


Colour ribbon cassette and print paper
Colour ribbon cassette supplied or contained in the recommended video printing packs is for use exclusively with regular and sticker print paper. Even if you replace the type of print paper, you do not need to replace the colour ribbon cassette.

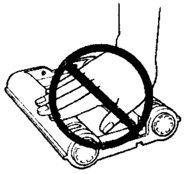
If your colour ribbon should tear
Repair the ribbon with transparent tape. There should be no problem with using the remaining portion of the ribbon.
Before loading the colour ribbon cassette into the printer, remove any slack by winding the ribbon until the black bar is positioned between the two rolls of the cassette.



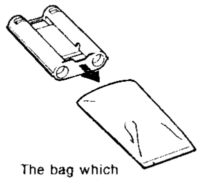
Caution
Never put your hand into the ribbon compartment. The thermal head reaches high temperatures, especially after repeated printing.



Note on handling colour ribbons
Do not touch the colour ribbon or place it in a dusty location.
Fingerprints or dust on colour ribbon will result in imperfect printing.



Notes on storing colour ribbons
- Avoid placing the ribbon in a location subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- When you are going to store a partially-used colour ribbon cassette for an extended period of time, store it in its original bag.



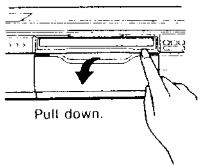
The bag which contained the colour ribbon cassette.

Loading the Print Paper

Before you begin

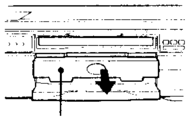
- Make sure that you use the print paper recommended for this printer only.
- When handling the print paper, be careful not to touch the printing surface.

1 Open the paper compartment lid.

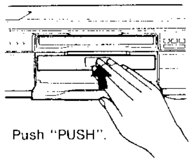


When you use the printer for the first time

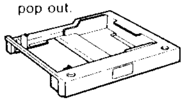
When your printer is delivered, a stopper is installed instead of the paper tray. Pull out the stopper before use.


Pull out the stopper.

2 Remove the paper tray.

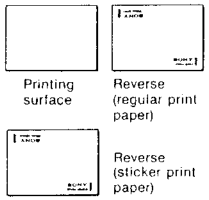


The paper tray will pop out.

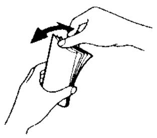


3 Place the print paper in the paper tray.

(1) Determine which side is the printing surface. The shiny side without Sony logos is for printing.


Printing surface
Reverse (regular print paper)
Reverse (sticker print paper)

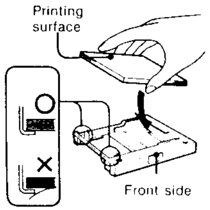
(2) Ruffle the paper.



Note

Be careful not to touch the printing surface.

(3) Place the print paper in the paper tray with the printing surface facing up.

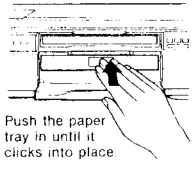

Printing surface
Front side

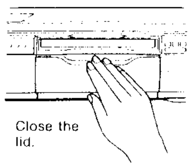
Make sure that the print paper is placed above the paper holder.

Notes

- The paper tray can hold up to 30 sheets of paper. When you add paper to a partly-full tray, be careful that the total number of sheets does not exceed 30. If you exceed this limit, paper jams may occur.
- Use the print paper recommended for this printer only. If you use a different type of paper, the printer may not print properly or may cause problems.
- Do not place different types of paper in the tray. If you do, paper jams may occur.

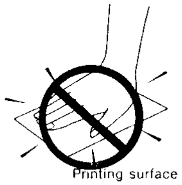
4 Slide the paper tray back into the printer and close the paper compartment lid.


Push the paper tray in until it clicks into place.

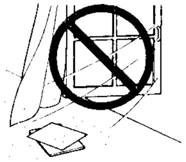

Close the lid.

Notes on handling the print paper

- The print paper is not photosensitive. You can handle it in normal daylight.
- Do not touch the printing surface. Finger prints or dust on the printing surface may result in imperfect printing.

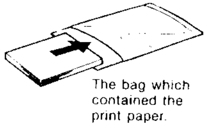

Printing surface

- Do not wind or wrinkle the print paper.
- Do not place the print paper in a dusty location.



Notes on storing the print paper

- Avoid placing the print paper in a location subject to:
  - — high temperatures
  - — high humidity
  - — excessive dust
  - — direct sunlight
- When you are going to store a partially-used package of the print paper for an extended period of time, store it in their original bag.


The bag which contained the print paper.

Making Basic Printouts

This chapter gives you a general idea of how to use the colour video printer by leading you step-by-step through the process of making a full-size, basic printout. The operation described here is very simple: what you should do is just press the buttons on the front panel of the main unit, without displaying and using the MENU screen as described in the next chapter.

This chapter covers the following topics:

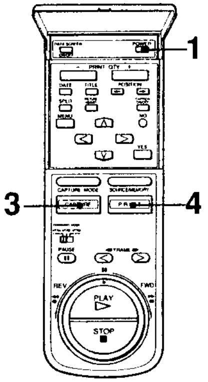
- Printing a Full-Size Image
  - — Printing a fast-moving image without blur
  - — Making more than one copy of an image
- Printing TV Broadcast Pictures
  (If you have no video equipment)

Printing a Full-Size Image

The following are the steps to make a full-size, basic printout of the pictures played back on the video equipment. For printing from the TV, refer to "Printing TV Broadcast Pictures" on page 38.

Before you begin

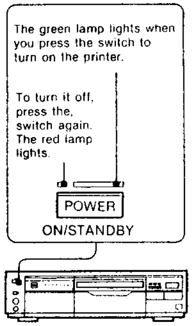
- Check that the printer is properly connected to the video equipment and television.
- Check that the correct combination of colour ribbon cassette and print paper are properly loaded.



You can use the remote commander to do this.

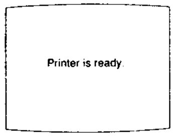
1 Turn on the power of the printer and the video equipment.

(Set the TV/VTR switch on the TV to "VTR".)



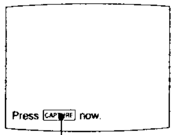
The green lamp lights when you press the switch to turn on the printer.

To turn it off, press the, switch again. The red lamp lights.



Printer is ready.

In about 4 seconds after you turn on the power, the printer becomes ready for printing and the following message appears.

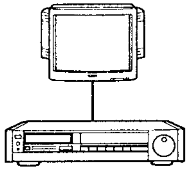


Press CAPTURE now.

Indicates the next operation.

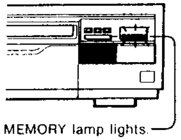
Note
Before the printer becomes ready, you cannot turn off the power even if you press the POWER switch.

2 Play back the pictures on the video equipment.

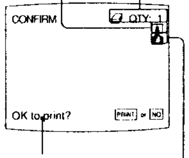


3 When the image you want to print appears on the screen, press the CAPTURE button to store it.

The image stored in memory appears on the screen so that you can confirm the image for printing.



MEMORY lamp lights.



CONFIRM QTY: 1

OK to print? PRINT or NO

Present print quantity

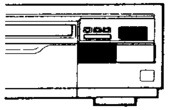
Present memory mode (FRAME)

Next operation options

Indicates the displayed picture is the stored image.

Confirm and error beep sounds
When you press a button on the main unit or remote commander, a beep sounds to show that you have done an expected step of the operation. If you have done an unacceptable step, repeated beeps sound to show that the printer rejected your operation.

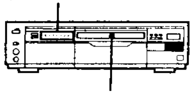
To change the image stored in memory
Press the NO button or the SOURCE/MEMORY button to return to the playback pictures. Press the CAPTURE button again to store a new image. The previous image in memory is replaced with the new one.



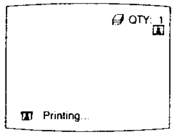
4 Press the PRINT button.

The playback picture reappears on the screen. Wait about 70 seconds for a printout to emerge.

Dots on the PRINT STATUS lamp flash one after another, from left (START) to right (END), as printing process proceeds.



When the printout emerges from the paper outlet, take it out.

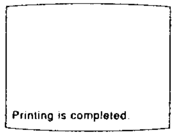


QTY: 1

Printing...

When the printing is over

⇩



Printing is completed.

Note
To prevent paper jamming, do not leave more than 30 printouts on the paper outlet.

When the printer does not print

- If you turn off the printer, the stored image is erased. Store the image again to print it.
- As long as the ERROR or PAPER JAM lamp lights or an error message appears on the screen, the printer will not print. To correct the error, see "Error messages" on page 66 or "If Paper Jams" on page 68.

Notes

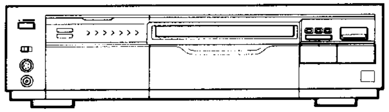
- To avoid malfunction, do not unplug the power cord from the wall outlet during printing or operation.
- If you should turn off the printer during printing, the printer will be turned off automatically after the printing in process is complete.
- Do not open the hatches for checking a paper jam on the upper and bottom panels of the printer during printing.
- A black line may appear on the right or left end of a printout although no such a line appears on the screen. This is due to a distortion in the video signals and not due to some trouble with the printer.

Notes on preserving your printouts

- To avoid degradation of the colour, do not place a printout in locations subject to:
  - — high temperatures
  - — high humidity
  - — direct sunlight

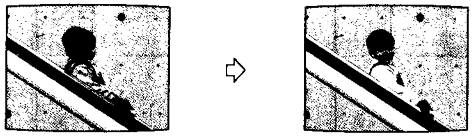
  Also avoid contact with any liquid, especially alcohol or solvents.
- Do not stick cellophane tape or leave plastic erasers on a printout. Also avoid putting a printout under a plastic desk mat. The colour may stick to the plastic surface.
- When storing in an album, use a pocket-type transparent album. If a printout is stored in an album containing chemical material or glue, dye from the printout may transfer to the album paper.

A fast-moving image may be blurred when it is printed in the FRAME mode. To eliminate the blur, press the CAPTURE MODE button to select FIELD A or FIELD B and then print the image. You can thus eliminate blurring.
The picture quality, however, may become coarse when printed in FIELD mode. (You can change the memory mode FRAME to FIELD A or B to print an image stored in the FRAME mode).
For details, refer to "About Memory (capture) Mode" on page 62.



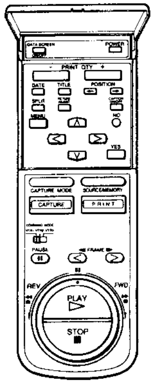
As you press the CAPTURE MODE button, the memory mode changes and corresponding lamp lights:
FRAME → FIELD A → FIELD B

CAPTURE MODE button.



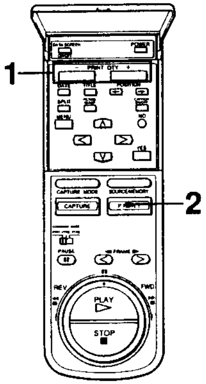
FRAME mode

FILED A or B (blur is eliminated)



Making more than one copy of an image

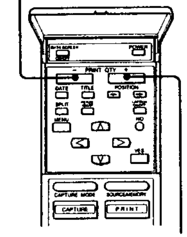
You can print up to 30 copies of a stored image repeatedly.
The following are the steps for setting the print quantity on the remote commander. To set the print quantity with the MENU screen, refer to "Setting Print Quantity" on page 56.



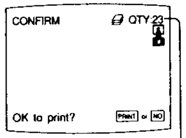
1 After storing the image you want to print with the CAPTURE button, press PRINT QTY −/+ buttons to designate the print quantity.

You can designate a number from 1 to 30.

To decrease the number, press the − button as many times as required. To decrease continuously, keep the button depressed.



To increase the number, press the + button as many times as required. To increase continuously, keep the button depressed.



CONFIRM QTY 23

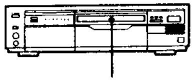
OK to print? PRINT or NO

As you press the PRINT QTY buttons, the number changes.

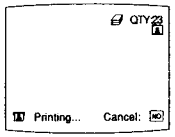
Note
You can set the print quantity while "QTY" is displayed on screen.

2 Press the PRINT button.

Wait about 70 seconds for the first copy to emerge, then wait about another 70 seconds for the second copy to emerge and so on.



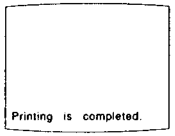
Printouts emerge one after another.



QTY 23

Printing... Cancel: NO

When all the copies are printed,



Printing is completed.

To stop printing midway
Press the NO button on the remote commander or the main unit. After the printing in process is completed, the remaining printing is canceled.

To change the number of copies midway
To increase the number, press the PRINT QTY + button on the commander. To decrease, press the PRINT QTY − button. You cannot change the number during printing with the buttons on the main unit.

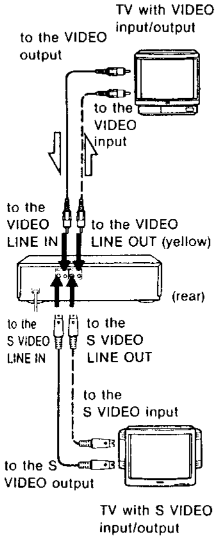
If the print paper runs out midway
Load the print paper in the tray and press the PRINT button. The remaining copies will be printed.

Printing TV Broadcast Pictures (no video equipment)

Even when you have no video equipment, you can print TV broadcast pictures. The TV should have VIDEO and/or S VIDEO input/output connectors. (A TV with only aerial connectors cannot be connected to the printer.)

1 Connect the printer to the TV.

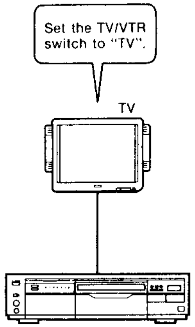
When your TV has both S VIDEO and VIDEO input/output connectors, use the S VIDEO connectors for better picture quality.


TV with VIDEO input/output
to the VIDEO output
to the VIDEO input
to the VIDEO LINE IN
to the VIDEO LINE OUT (yellow)
(rear)
to the S VIDEO LINE IN
to the S VIDEO LINE OUT
to the S VIDEO input
to the S VIDEO output
TV with S VIDEO input/output

∗To check the image to be printed, the connections marked with – – – are necessary.

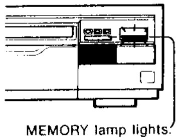
2 Set the INPUT SELECT switch on the front panel of the printer to "REAR" (when using the rear input connectors) and turn on the power of the printer and the TV.

(When using the front input connectors, set it to "FRONT.")
Also set the TV/VTR switch on the TV to "TV." (You can watch the TV programs as usual.)


Set the TV/VTR switch to "TV".
TV

3 When the image you want to print appears on the screen, press the CAPTURE button to store it.

The MEMORY lamp lights indicating that the image is stored, although the TV screen displays the broadcast pictures. No message appears on the screen.


MEMORY lamp lights

To check the image stored in the memory

① Set the TV/VTR switch on the TV to "VTR".
② Make sure that the MEMORY lamp lights. If it does not, press the SOURCE/MEMORY button.
The stored image is displayed with the "CONFIRM" message.

To change the image stored in memory

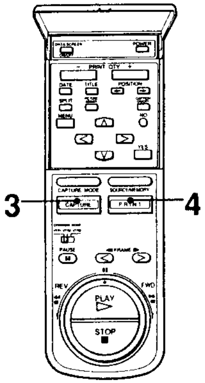
① Set the TV/VTR switch on the TV to "TV."
② Make sure that the MEMORY lamp goes off. If it does not, press the SOURCE/MEMORY button.
The broadcast pictures are displayed.
③ If you have just pressed the CAPTURE button, press the NO button.
④ When the image you want to print appears, press the CAPTURE button to store it.
The MEMORY lamp lights.

4 Press the PRINT button.

Wait about 70 seconds for the printout to emerge.

Notes

- When you want to make a variety of printouts using the MENU screen, set the TV/VTR switch on the TV to "VTR." Display the MENU screen and make the necessary settings. Then set the switch to "TV" and store and print an image.
- When you turn off the printer, the image stored in memory is erased. When you printing from the video equipment, you can store the same image again. When printing from the TV, however, you cannot store the same broadcast picture again.
- When the MEMORY lamp lights, you can print the stored image but cannot store another image. If you press the CAPTURE button, error beeps sound.
When the MEMORY lamp goes off, you can store an image but cannot print the image. If you press the PRINT button, error beeps sound.


3
4
CAPTURE
PRINT
PLAY
STOP

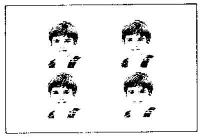
Going Beyond the Basics

Besides the basic full-size printouts, you can make a variety of printous. This chapter covers the following operations which require using the MENU screen:

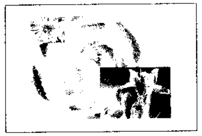
- Making a Variety of Printouts
- Setting the Print Quantity
- Adjusting the Picture Quality of Printouts
- Storing one Image while Printing Another
- About Capture (memory) Mode

Before proceeding into this chapter, please read the previous chapter to become familiar with the basic operation of the colour video printer. The types of printouts possible are:

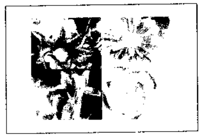
Printout of the same image in 1/4 size or 1/16 size (page 44)



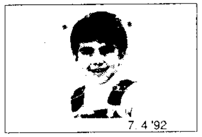
Printout with multiple inset images (page 50)



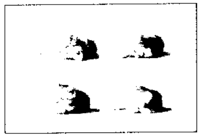
Print out of different images in 1/4 size or 1/16 size (page 46)



Printing with a caption (page 52)

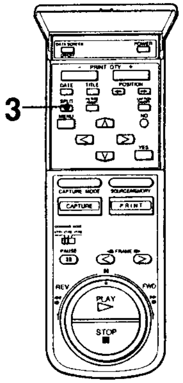


Printout strobe images in 1/4 size or 1/16 size (page 48)



Making a Variety of Printouts

To make a printout of 1/4-size or 1/16-size of the same, different, or strobe images or a printout with multiple inset images, select the SPLIT in the main MENU screen.



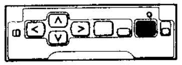
When using the remote commander, you can display the SPLIT menu screen by just pressing the SPLIT button. (When another menu is displayed, wait for the menu mode to be over and then press the SPLIT button.)

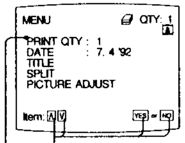
To watch the demonstration of how to use the menus

Press the DEMONSTRATION button on the main unit. The demonstration of how to use the menus automatically starts. The demonstration will be repeated until you press the PRINT button to print the stored image or the DEMONSTRATION button to quit the demonstration. (The NO button does not stop the demonstration.)

1 Press the MENU button.

The background becomes darker and the main MENU screen appears.





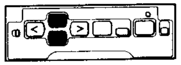
MENU QTY: 1
PRINT QTY : 1
DATE : 7. 4 '92
TITLE
SPLIT
PICTURE ADJUST
Item: Λ V YES or NO

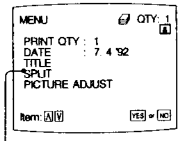
Operations buttons displayed in white.

Selected item (sub-menu) is displayed in yellow.

2 Select the "SPLIT" with the Λ V buttons.

"SPLIT" is selected and displayed in yellow.



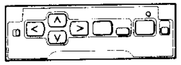


MENU QTY: 1
PRINT QTY : 1
DATE : 7. 4 '92
TITLE
SPLIT
PICTURE ADJUST
Item: Λ V YES or NO

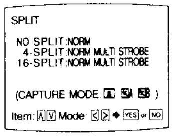
"SPLIT" is selected.

3 Press the YES button.

The SPLIT menu (sub-menu) screen appears.



Present SPLIT mode is displayed in yellow.

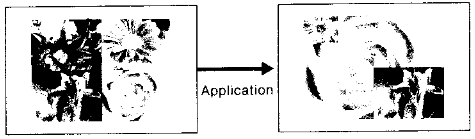


SPLIT
NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE
(CAPTURE MODE:)
Item: Λ V Mode: < > ➡ YES or NO

Present capture mode is displayed in yellow.

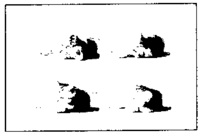
For making a printout of different images in 1/4 size or 1/16 size, proceed to page 46.

For making a printout with multiple inset images, proceed to page 50.



For making a printout of the same image in 1/4 size or 1/16 size, proceed to page 44.

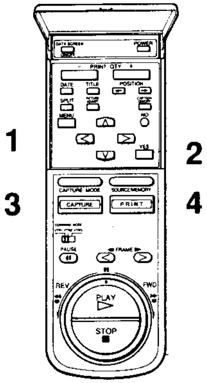
For making a printout of strobe images in 1/4 size or 1/16 size, proceed to page 48.



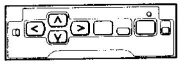
To undo the last operation
Press the NO button. The screen returns to the previous mode.

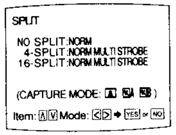
Making a Variety of Printouts

Before you proceed to the following steps, do the steps described on page 42 and display the SPLIT menu screen.



1 **Select "4-SPLIT" or "16-SPLIT" with the ∧ ∨ buttons and select "MULTI" with the < > buttons.**





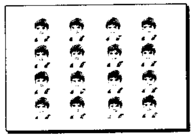
SPLIT

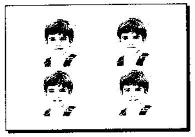
NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE

(CAPTURE MODE: ▣ ▣A ▣B)

Item: ∧ ∨ Mode: < > ➡ YES or NO

Selected mode is displayed in yellow.

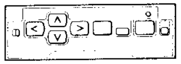


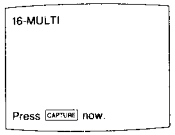


Printouts of the same image in 1/4 size or 1/16 size will be printed with white divisions.

2 **Press the YES button.**

SPLIT MULTI input screen appears.



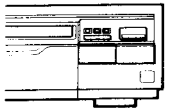


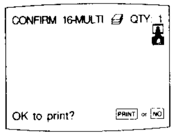
16-MULTI

Press CAPTURE now.

Selected SPLIT mode (when selecting 16-SPLIT, MULTI)

3 **When the image you want to print appears, press the CAPTURE button to store it in memory.**





CONFIRM 16-MULTI QTY 1

OK to print? PRINT or NO

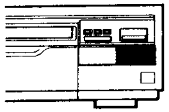
The image stored in memory appears on the screen so that you can confirm the image for printing. (Although the stored image is displayed in full-size screen, the image is actually printed in 4-split or 16-split planes.)

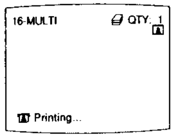
To change the image stored in the memory
Press the NO button or the SOURCE/MEMORY button to return to the playback pictures. Press the CAPTURE button again to store a new image. The previous image in memory is replaced with the new one.

To change the split number of the stored image
The image stored in 4-SPLIT MULTI (or 16-SPLIT MULTI) mode can be printed in 16-SPLIT MULTI mode (or 4-SPLIT MULTI). To change the split number, press the MENU button to return to the main MENU screen and select the SPLIT again. Then select the desired SPLIT mode. You can also change the 4-SPLIT or 16-SPLIT to NO SPLIT (full-size) mode. An image stored in NO SPLIT mode can be printed in 4-SPLIT or 16-SPLIT MULTI mode.

4 **Press the PRINT button.**

The playback pictures appear on the screen. Wait about 70 seconds for a printout to emerge.



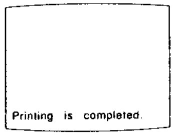


16-MULTI QTY 1

Printing...

When the printing is over,

⇩



Printing is completed.

To stop printing (When printing more than one copy)
Press the NO button. The printing stops after the printing in process is completed.

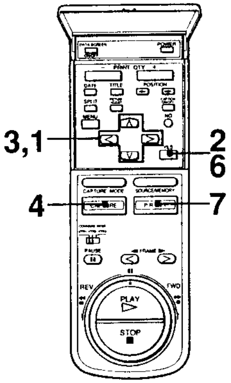
To store one image while printing another
When you set the CAPTURE MODE to FIELD A or B, you can store one image while printing another. For details, refer to "Storing one Image while Printing Another" on page 60.

To confirm the stored image
Press the SOURCE/ MEMORY button. The MEMORY lamp lights and the stored image is displayed on the screen with the CONFIRM message.

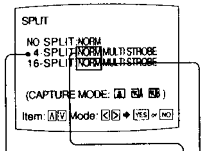
To select a different sub-menu
Press the MENU button and select the desired item (sub-menu) on the main MENU screen with the ∧ ∨ buttons.

Printout of different images in 1/4 size or 1/16 size

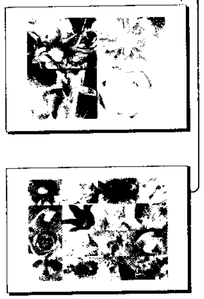
Before you proceed to the following steps, do the steps described on page 42 and display the SPLIT menu screen. Also set the CAPTURE MODE to FRAME.



1 **Select "4-SPLIT" or "16-SPLIT" with the [Λ] [V] buttons and select "NORM" with the [<] [>] buttons.**


SPLIT
NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE
(CAPTURE MODE: ▣ ▣ ▣)
Item: [Λ][V] Mode: [<][>] ➔ [YES] or [NO]

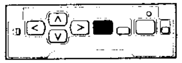
Selected mode is displayed in yellow.

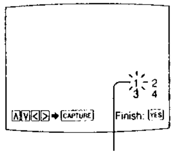


Printouts of different image in 1/4 size or 1/16 size will be printed without white divisions.

2 **Press the YES button.**

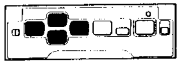
SPLIT NORM input screen appears.

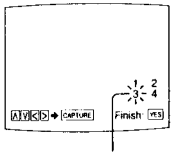




The position where an image is first stored flashes. (when selecting the 4-SPLIT, NORM mode).

3 **Select where an image is to be stored with the [Λ] [V] [<] [>] buttons.**

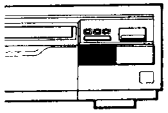


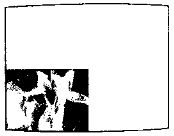


Selected position flashes.

About the CAPTURE MODE available
In 4-SPLIT or 16-SPLIT NORM mode, set CAPTURE MODE to FRAME. If you select the 4-SPLIT or 16-SPLIT NORM mode with FIELD A or B mode, an error message stating "CAPTURE MODE is set to ▣ ." appears and CAPTURE MODE is automatically switches to FRAME mode. (You can print a fast-moving subject without blur.)

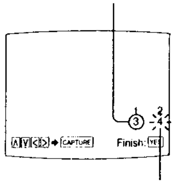
4 **When the image you want to print appears, press the CAPTURE button to store it in memory.**





The stored image is displayed for about one second. Then the palyback picture reappears on the screen

The position occupied with a stored image is displayed in yellow.



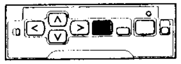
The position where an image can be stored next flashes. (Flashing position moves: 1 → 2 → 3 → 4)

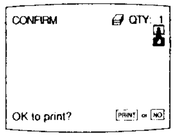
5 **Repeat steps 3 and 4 until you have stored 4 or 16 images in all the positions.**

To change the image stored in memory
Make the position you want to change blink with the [Λ] [V] [<] [>] buttons. Then store a new image to replace the previous one.

To confirm the stored image
Press the SOURCE/MEMORY button. The MEMORY lamp lights and the stored image is displayed on the screen with the CONFIRM message.

6 **Press the YES button.**

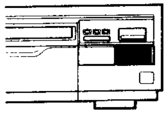


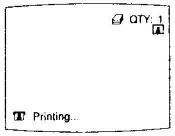


The stored images are displayed as they will be printed.

To change the image stored in the memory
Press the NO button and store new images.

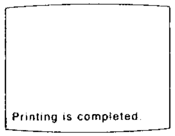
7 **Press the PRINT button.**



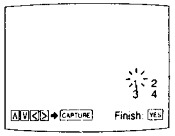


When the printing is over,

⇩



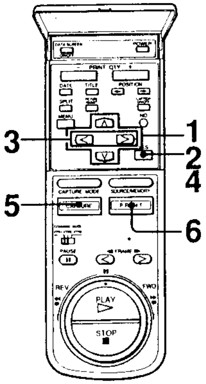
⇩



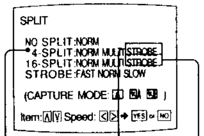
To select a different sub-menu
Press the MENU button and select the desired item (sub-menu) on the main MENU screen with the [Λ] [V] buttons.

Printout of strobe images in 1/4 size or 1/16 size

Before you proceed to the following steps, do the steps described on page 42 and display the SPLIT menu screen. Also set CAPTURE MODE to FRAME.



1 **Select "4-SPLIT" or "16-SPLIT" with the [∧] [∨] buttons and select "STROBE" with the [<] [>] buttons.**

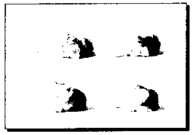

SPLIT

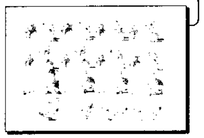
NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE
STROBE:FAST NORM SLOW

(CAPTURE MODE: ▣ ▣ ▣)

Item:[∧][∨] Speed: [<][>] → [YES] or [NO]

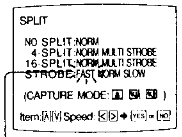
Selected mode is displayed in yellow.





Printouts of 4 or 16 sequential views of a moving object (strobe images), each in 1/4 size or 1/16 size, will be printed without white divisions.

2 **Press the YES button.**


SPLIT

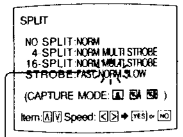
NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE
STROBE:FAST NORM SLOW

(CAPTURE MODE: ▣ ▣ ▣)

Item:[∧][∨] Speed: [<][>] → [YES] or [NO]

Flashing

3 **Select the speed of the strobe action with the [<] [>] buttons.**


SPLIT

NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE
STROBE:FAST NORM SLOW

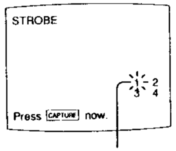
(CAPTURE MODE: ▣ ▣ ▣)

Item:[∧][∨] Speed: [<][>] → [YES] or [NO]

Selected speed flashes.

4 **Press the YES button.**

STROBE input screen appears.


STROBE

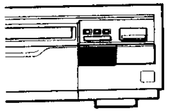
Press [CAPTURE] now.

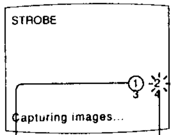
Flashing. (When selecting 4-SPLIT STROBE mode)

About the CAPTURE MODE available
In 4-SPLIT or 16-SPLIT STROBE mode, set CAPTURE MODE to FRAME. If you select FIELD A or B mode, an error message stating "CAPTURE MODE is set to ▣ ." appears and CAPTURE MODE is automatically switches to FRAME mode. (You can print a fast-moving subject without blur.)

5 **When the image you want to print appears, press the CAPTURE button to start storing a series of strobe images.**

Sequential views of a moving object are automatically stored with the selected strobe action speed in step 3.



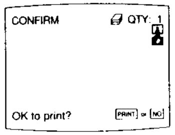

STROBE

Capturing images...

The position where an image is stored lights in yellow.

The position where an image is being stored flashes in the order of 1 → 2 → 3 → 4.

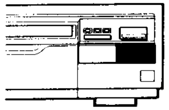
When all the images are stored, they are displayed as they will be printed.

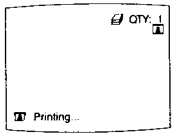

CONFIRM QTY: 1

OK to print? [PRINT] or [NO]

To change the image stored in the memory
Press the NO button and then the CAPTURE button to start storing strobe images.

6 **Press the PRINT button.**

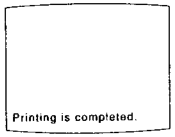



QTY: 1

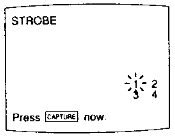
Printing...

When the printing is over,

⇩


Printing is completed.

⇩


STROBE

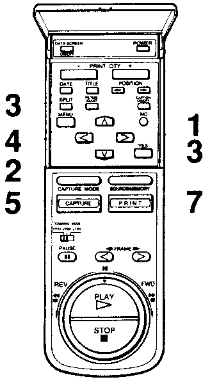
Press [CAPTURE] now.

To select a different sub-menu
Press the MENU button and select the desired item (sub-menu) on the main MENU screen with the [∧] [∨] buttons.

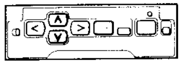
Note
When you combine 4-SPLIT NORM or STROBE mode with 16-SPLIT MULTI mode (or, 16-SPLIT NORM or STROBE mode with 4-SPLIT MULTI mode), you can make a printout of 64 images. Such a printout, however, cannot be recommended since its picture quality becomes poor.

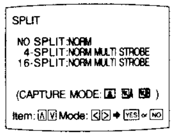
Making a Variety of Printouts

You can inset multiple 1/4 size and/or 1/16 size images in a full-size image. First store the full-size background image and then store 1/4 size and/or 1/16 size inset images. Before you proceed to the following steps, do the steps described on page 42 and display the SPLIT menu screen. Also, set CAPTURE MODE to FRAME.



1 **Select "NO SPLIT: NORM" with the ∧ ∨ buttons and press the YES button. Press the CAPTURE button to store the background image (full-size).**





SPLIT

NO SPLIT:NORM
4-SPLIT:NORM MULTI STROBE
16-SPLIT:NORM MULTI STROBE

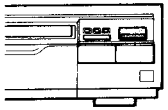
(CAPTURE MODE: ▣ ▣ ▣)

Item: ∧ ∨ Mode: < > ➔ YES or NO

Lights yellow.

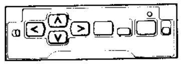
About the CAPTURE MODE available
Set the CAPTURE MODE to FRAME. If you store the background full-size image with the FIELD A or B mode and select the 4-SPLIT or 16-SPLIT mode, an error message stating "CAPTURE MODE is set to ▣ ." appears and CAPTURE MODE is automatically switches to FRAME mode. At that time, the background image will be overlapped with the image stored in the other FIELD mode.

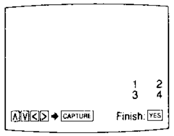
2 **Press the SOURCE/ MEMORY button to display playback pictures.**



3 **Press the MENU button. Then select "4-SPLIT NORM" or "16-SPLIT NORM" and press the YES button.**

4 **Select where an image is to be inset with the ∧ ∨ < > buttons.**



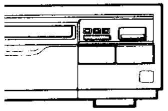


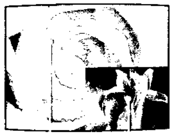
1 2
3 4

∧∨<> ➔ CAPTURE Finish: YES

Selected position flashes. (ex. in the 4-SPLIT NORM mode)

5 **When the image you want to inset appears, press the CAPTURE button.**

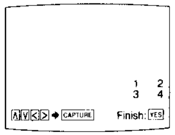




Background full-size image

The inset image

The stored image is displayed for about one second. Then playback pictures reappear.



1 2
3 4

∧∨<> ➔ CAPTURE Finish: YES

Position where an image is to be stored flashes.

Position where an image is stored lights in yellow.

6 **To inset multiple images, repeat steps 4 and 5.**

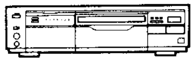
To change the image stored in the memory
Make the position you want to change flash with the ∧ ∨ < > buttons. Then store a new image to replace the previous one.

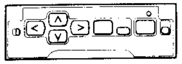
To inset both 1/4-size and 1/16-size images
Press the MENU button to return to the main MENU screen. Then select the different SPLIT NORM mode (4-SPLIT NORM or 16-SPLIT NORM). Repeat steps 4 and 5.

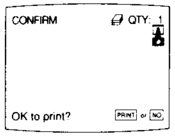
To confirm the stored image
Press the YES button. The MEMORY lamp lights and the stored image is displayed on the screen with the CONFIRM message.

To change the image stored in the memory
Press the NO button and then the CAPTURE button to store new images.

7 **Press the YES button to fix the inset images and then press the PRINT button.**







CONFIRM QTY: 1

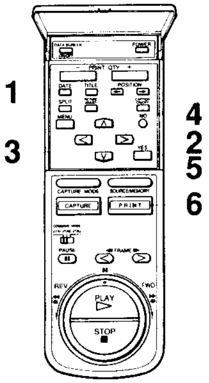
OK to print? PRINT or NO

When the YES button is pressed, the stored images are displayed as they are printed.

To select a different sub-menu
Press the MENU button and select the desired item (sub-menu) on the main MENU screen with the ∧ ∨ buttons.

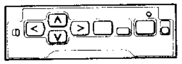
Printing with a Date

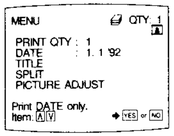
You can put a date on a printout. When you select DATE in the main MENU screen, you cannot select the TITLE (title input) menu. When you want to enter both a date and a title, select the TITLE menu as they will allow you to enter numbers and letters at the same time.


1
3
4
2
5
6
PLAY
STOP
CAPTURE
PRINT

Press the DATE button and the DATE input screen appears at once.

1 Press the MENU button and select "DATE" with the [∧] [∨] buttons.

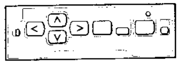


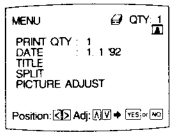

MENU
QTY: 1
PRINT QTY : 1
DATE : 1. 1 '92
TITLE
SPLIT
PICTURE ADJUST
Print DATE only.
Item: [∧][∨]
➡ [YES] or [NO]

Lights in yellow.

2 Press the YES button.

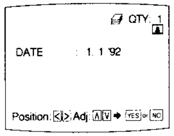
DATE input screen appears.




MENU
QTY: 1
PRINT QTY : 1
DATE : 1. 1 '92
TITLE
SPLIT
PICTURE ADJUST
Position: [<][>] Adj: [∧][∨] ➡ [YES] or [NO]

Flashes.

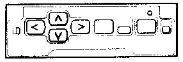
When you press the DATE button on the remote commander


QTY: 1
DATE : 1. 1 '92
Position: [<][>] Adj: [∧][∨] ➡ [YES] or [NO]

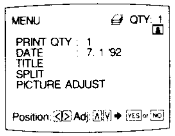
3 Enter the desired number as the day or month with the [∧] [∨] buttons.

You can enter a desired number for the first two items from 1 to 31; they can be set to as either day or month.

To increase the number, press the [∧] button.
To decrease the number, press the [∨] button.



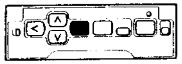
Increases the number. Decreases the number.

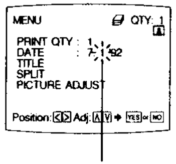

MENU
QTY: 1
PRINT QTY : 1
DATE : 7. 1 '92
TITLE
SPLIT
PICTURE ADJUST
Position: [<][>] Adj: [∧][∨] ➡ [YES] or [NO]

Number changes.

To cancel the date just entered
Press the NO button. The date returns to the previous date and the DATE input screen is released.

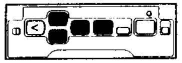
4 Press the [>] button to move to the next item (month/day).

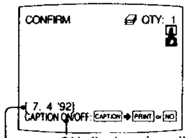



MENU
QTY: 1
PRINT QTY : 1
DATE : 7. 1 '92
TITLE
SPLIT
PICTURE ADJUST
Position: [<][>] Adj: [∧][∨] ➡ [YES] or [NO]

Flashes.

5 Repeat steps 3 and 4 to enter the date, month and year. Press the YES button to fix the date.



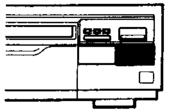

CONFIRM
QTY: 1
[7. 4 '92]
CAPTION ON/OFF: [CAPTION] ➡ [PRINT] or [NO]

ON displays in yellow.
Entered date

When the entered date is displayed, the stored image is printed with the date. If the entered date is not displayed, press the CAPTION button.
If the playback pictures appear, press the SOURCE/MEMORY button to display the stored image on the screen. Or, if you have not stored an image yet, press the CAPTURE button.

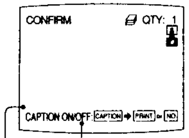
To change the date
Highlight the item in yellow with the [<] [>] buttons and change the value with [∧] [∨] buttons.

6 Press the PRINT button.



The stored image will be printed with the date.

To print the image without the date
Press the CAPTION button so that the entered date disappears on the screen.


CONFIRM
QTY: 1
CAPTION ON/OFF: [CAPTION] ➡ [PRINT] or [NO]

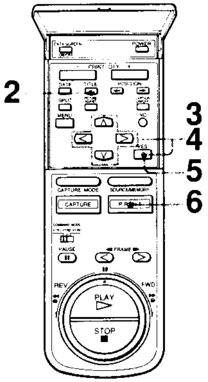
OFF displays in yellow.
Entered date is not displayed.

Note
The entered date will be stored after you turn off the power.
When you unplug the AC power cord, the date returns to the default date: I.I '92

Printing with a Title

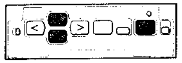
You can put a title of up to 40 characters, such as a date and a comment, below the image. When you select the TITLE in the main MENU screen, you cannot select the DATE menu. When you want to enter both a date and a title, select the TITLE menu as you can enter figures and characters at the same time.

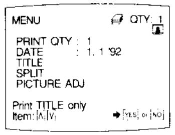
Happy birthday! 7.4 '92



Press the TITLE button and the TITLE input screen appears at once.

1 Press the MENU button and select "TITLE" with the [Λ] [V] buttons.



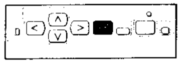


```
MENU                 QTY: 1
 PRINT QTY : 1
 DATE      : 1. 1 '92
 TITLE
 SPLIT
 PICTURE ADJ
Print TITLE only
Item: Λ V              ➔ YES or NO
```

Lights in yellow.

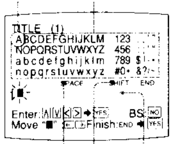
2 Press the YES button.

TITLE (title input) (1) menu screen appears.



Selected character lights in yellow.

Characters available for a title



```
TITLE  (1)
 ABCDEFGHIJKLM  123
 NOPQRSTUVWXYZ  456
 abcdefghijklm  789 $!-·
 nopqrstuvwxyz  #0· &?/-
        SPACE    SHIFT  END
[■
Enter: Λ V < > ➔ YES     BS: NO
Move "■" : ← → Finish: END ➔ YES
```

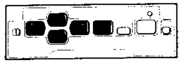
Enters a blank space between characters.

Character input line

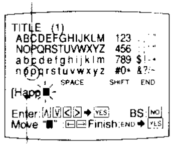
Shifts TITLE screen from TITLE (1) to (2) or vice versa.

To return to the main MENU screen
Press the NO button. The main MENU screen reappears.

3 Select the desired character by pressing the [<] [>] [Λ] [V] buttons and press the YES button to enter it in the input line.



Selected character lights in yellow.

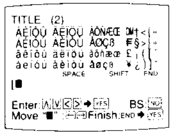


```
TITLE  (1)
 ABCDEFGHIJKLM  123
 NOPQRSTUVWXYZ  456
 abcdefghijklm  789 $!-·
 nopqrstuvwxyz  #0· &?/-
        SPACE    SHIFT  END
[Happ■
Enter: Λ V < > ➔ YES     BS: NO
Move "■" : ← → Finish: END ➔ YES
```

Characters entered.

To enter spaces between characters
Select "SPACE" with the [<] [>] [Λ] [V] buttons as many times as you want.

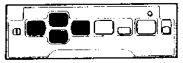
To shift to TITLE (2) menu screen
Select "SHIFT" with the [<] [>] [Λ] [V] buttons and press the YES button.
To return to the TITLE (1) screen, select "SHIFT" and press the YES button again.

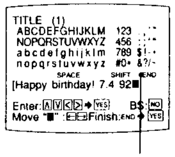


```
TITLE  (2)
        SPACE    SHIFT  END
[■
Enter: Λ V < > ➔ YES     BS: NO
Move "■" : ← → Finish: END ➔ YES
```

4 Repeat step 3 until you have enter all the characters for your title and then select "END" with the [Λ] [V] [<] [>] buttons.

You can enter up to 40 characters as a title.





```
TITLE  (1)
 ABCDEFGHIJKLM  123
 NOPQRSTUVWXYZ  456
 abcdefghijklm  789 $!-·
 nopqrstuvwxyz  #0· &?/-
        SPACE    SHIFT  END
[Happy birthday! 7.4 92■
Enter: Λ V < > ➔ YES     BS: NO
Move "■" : ← → Finish: END ➔ YES
```

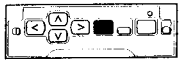
Lights in yellow.

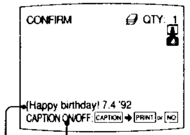
To erase the characters entered in the input line
Press the NO button. The character to the left of the cursor (highlighted in yellow) will be deleted.

To replace the character with the new one
Press the POSITION ←/→ buttons on the remote commander to move the the cursor (highlighted in yellow) to the character you want to replace. Then select a new character with the [<] [>] [Λ] [V] buttons and press the YES button: the new character replaces the previous one.

5 Press the YES button.

The CONFIRM screen appears with the entered title.





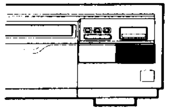
```
CONFIRM                 QTY: 1

[Happy birthday! 7.4 '92
CAPTION ON/OFF: CAPTION ➔ PRINT or NO
```

Lights in yellow

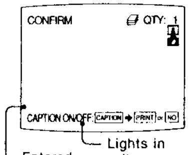
Entered title

When the entered title is displayed, the stored image is printed with the title. If it is not displayed, press the CAPTION button to make it appear. If the playback picture is being displayed, press the SOURCE/MEMORY button to display the stored image on the screen. Or, if you have not stored an image yet, press the CAPTURE button.

6 Press the PRINT button.



To print the image without the entered title
Press the CAPTION button so that the entered title is not displayed.



```
CONFIRM                 QTY: 1

CAPTION ON/OFF: CAPTION ➔ PRINT or NO
```

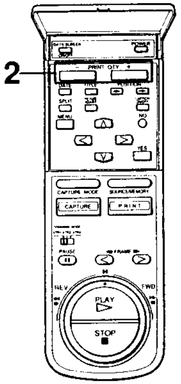
Entered title disappears.

Lights in yellow

Notes
- The entered title will be lost when you turn off the power.
- We suggest you set the CAPTURE MODE to FRAME to print the title distinctly.
If you select FIELD A or B, the title may be coarse when printed.

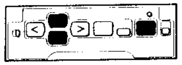
Setting the Print Quantity

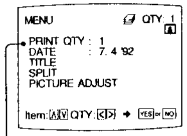
You can print up to 30 copies of a stored image repeatedly. Set a print quantity in the PRINT QTY menu.



Press the PRINT QTY –/+ buttons to increase an decrease the print quantity. For details, refer to "Making more than one copy of an image" on page 37.

1 Press the MENU button and select "PRINT QTY" with the [∧] [∨] buttons.



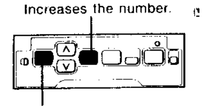


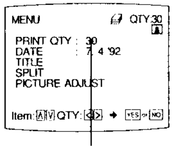
```
MENU                    QTY: 1
• PRINT QTY :  1
  DATE      :  7. 4 '92
  TITLE
  SPLIT
  PICTURE ADJUST

Item:[∧][∨] QTY:[<][>] ➜ [YES] or [NO]
```

Lights in yellow.

2 Set the desired number for the print quantity with the [<] [>] buttons.

To increase the number, press the [>] button.
To decrease the number, press the [<] button.



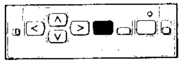


```
MENU                    QTY:30
  PRINT QTY :  30
  DATE      :  7. 4 '92
  TITLE
  SPLIT
  PICTURE ADJUST

Item:[∧][∨] QTY:[<][>] ➜ [YES] or [NO]
```

Print quantity value changes.

3 Press the YES button.

The screen returns to the previous status.

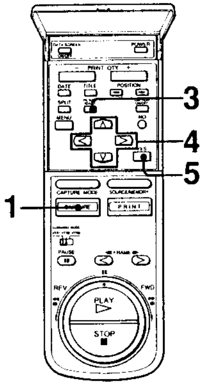


Notes

- When you turn off the printer, the print quantity setting returns to 1 (default).
- The newly set print quantity applies to the next printing.

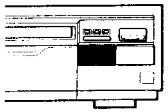
Adjusting the Picture Quality of Printouts

You can adjust the colour of the printouts on the PICTURE ADJUST (picture quality adjustment) menu.

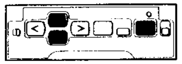


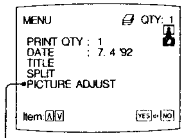
Press the PICTURE ADJUST button to directly display the PICTURE ADJUST screen.

1 When an image you want to print appears, press the CAPTURE button to store it in memory.



2 Press the MENU button and select "PICTURE ADJUST" with the [∧] [∨] buttons.



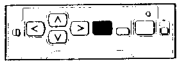


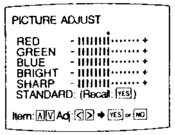
```
MENU                    QTY: 1
  PRINT QTY :  1
  DATE      :  7. 4 '92
  TITLE
  SPLIT
• PICTURE ADJUST

Item:[∧][∨]              [YES] or [NO]
```

Lights in yellow.

3 Press the YES button.

The PICTURE ADJUST menu appears. In the background, the stored image is displayed.

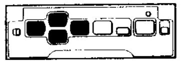




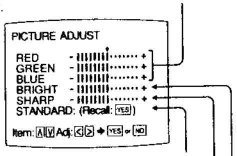
```
PICTURE ADJUST

 RED      - IIIIIII·······+
 GREEN    - IIIIIII·······+
 BLUE     - IIIIIII·······+
 BRIGHT   - IIIIIII·······+
 SHARP    - IIIIIII·······+
 STANDARD: (Recall:[YES])

Item:[∧][∨] Adj:[<][>] ➜ [YES] or [NO]
```

4 Select the item with the [∧] [∨] buttons and adjust the level with the [<] [>] buttons.

You can adjust each level of three colour elements (RGB), brightness, and the sharpness.
The level increases as you press the [>] button.
The level decreses as you press the [<] button.
As the picture quality of the background image changes according to the adjustment (except for the SHARP), adjust the level by checking the result.
When you want to set the picture quality to the standard levels, select "STANDARD" and then press the YES button.



Adjust each element of the colour (RGB). When each item is selected, it lights in its own colour (red, green, or blue). As the bar extends to the +, each intensity becomes stronger.



PICTURE ADJUST

RED - IIIIIIII······· +
GREEN - IIIIIIII······· +
BLUE - IIIIIIII······· +
BRIGHT - IIIIIIII······· +
SHARP - IIIIIIII······· +
STANDARD: (Recall: [YES])

Item: [∧][∨] Adj: [<][>] → [YES] or [NO]

Select to set all other levels at the mid-level.

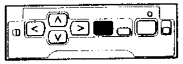
Adjust the sharpness of the image. As the bar extends to the +, the image becomes more distinct. (You cannot check the result in the background image.)

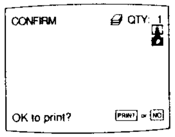
Adjust the brightness of the image. As the bar extends to the +, the image becomes brighter.

Notes
- During the picture adjustment, you cannot display the playback pictures even if you press the SOURCE/MEMORY button.
- You cannot adjust the picture quality during printing.

5 Press the YES button.

The adjusted image appears.





CONFIRM QTY: 1

OK to print? [PRINT] or [NO]

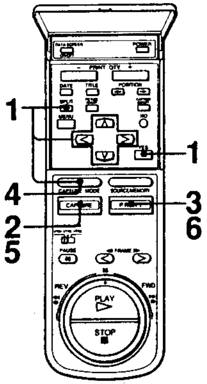
To cancel the setting
Press the NO button.
The levels return to the previous settings.

Notes
- The next printout is printed with the newly set values.
- You cannot adjust the picture quality during printing.
- The picture quality of the image you have checked on the screen may be slightly different from that of the printout. This occurs when the picture quality of the television itself differs from that of the printer.
- The picture adjust setting is stored even after you turn off the printer. When you unplug the AC power cord, all the level returns to the default: the standard level.

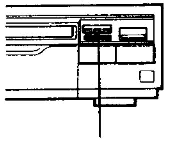
About AUTO PICTURE switch
Usually set the AUTO PICTURE (automatic gain control) switch on the main unit to ON. When you are going to print animation or another video source whose colour level changes quickly, an image may be printed with too much black and white colour. In such a case, set the switch to OFF and print the image again.

Storing one Image while Printing Another

In the NO SPLIT NORM (full-size), 4-SPLIT or 16-SPLIT MULTI (same image in 1/4 size or 1/16 size) modes, you can store two images in two fields of the memory — FIELD A and FIELD B.
This function allows you to store one image while printing another.



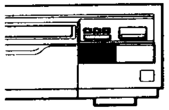
1 Select the "NO SPLIT", "4-SPLIT MULTI", or "16-SPLIT MULTI" in the SPLIT menu. Then press the CAPTURE MODE button to select FIELD A or B.

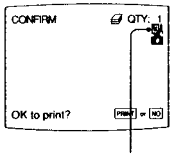


Selected FIELD memory lights.

2 When the image you want to print appears on the screen, press the CAPTURE button to store it.

The image stored in FIELD A (or B) memory appears.





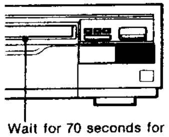
CONFIRM QTY: 1

OK to print? PRINT or NO

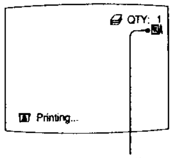
FIELD memory display (when FIELD A is selected and displayed in yellow.)

3 Press the PRINT button.

The image stored in FIELD A (or B) will be printed.
The playback pictures appear on the screen.



Wait for 70 seconds for a printout to emerge.

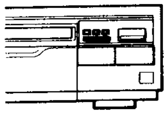


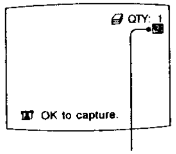
QTY: 1

Printing...

Displayed in yellow

4 Press the CAPTURE MODE button to select the other FIELD memory (A or B).





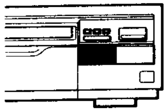
QTY: 1

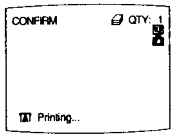
OK to capture.

FIELD B is displayed in light blue. (when switched to FIELD B) Indicates you can store another image.

5 When the image you want to print appears on the screen, press the CAPTURE button to store it.

The image is stored in the other FIELD memory and appears on the screen.

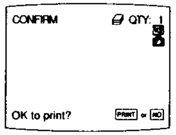




CONFIRM QTY: 1

Printing...

When printing of the image stored in FIELD A is completed, you can print the second image stored in FIELD B.



CONFIRM QTY: 1

OK to print? PRINT or NO

6 Press the PRINT button.

The second image is printed.

To confirm the stored images in FIELD A and B
Make sure that the MEMORY lamp is lit. If it is not, press the SOURCE/MEMORY button. Press the CAPTURE MODE button to display the image stored in FIELD A and B. (The corresponding lamp lights.)

To change the image stored in FIELD A or B
Press the SOURCE/MEMORY button to return to the playback picture. Press the CAPTURE MODE button to light the FIELD memory having the image you want to replace. Then press the CAPTURE button. The previous image in memory is replaced with the new one.

Notes
- You cannot use FRAME memory and FIELD memory at the same time.
- When printing a full-size image in FIELD memory mode, the picture quality of the printout may be coarse compared with that in FRAME memory mode.

About Capture (memory) Mode

This section explains how to use the FRAME and FIELD memory modes and the structure of the memory mode.

FRAME mode and FIELD mode

To print an image, you must first store it in memory. The memory consists of two fields. You can use these two fields together or separately. The memory use status is called the "capture (or memory) mode." There are two capture modes:
- FRAME mode: two fields are used together to store an image.
- FIELD mode: two fields are used separately to store two images.

Select either of the modes according to your purposes:

When you want to..	Memory Mode	Screen Display
• Print an image with high-resolution. • Make a full-size printout of a stable object.* • Make a printout of 1/4- or 1/16 size images or a printout with insets.**	FRAME	▣
• Print a fast-moving object without blur (only in making a full-size printout).* • Store one image while printing another.	FIELD A/B	▣A ▣B

*A fast-moving object may be printed with blur in the FRAME mode only when it is printed in full-size. When printing in 1/4 size or 1/16 size, we recommend you use the FRAME mode for better picture quality.
**When making a printout of different images, strobe images and insets in 1/4 size or 1/16 size, you can only select the FRAME mode.

How the picture is stored in memory
A television reproduces an image by scanning electron beams across its screen: first on every other line; then returning to the top, in the remaining lines. Each of the two scannings from top to bottom is called a field. Together they make up a frame.

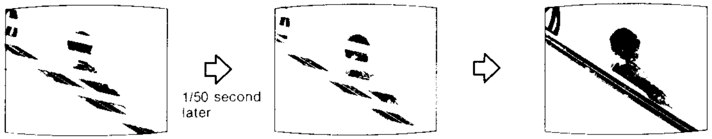
The colour video printer records an image in the same way. If the subject moves quickly, the first field image and the second field image differs slightly. When these two field images are overlapped in the frame setting, the frame image will appear jittery on the monitor and blurred when printed.

In printing a full-size image, you can print without blur in the FIELD mode. In printing 1/4- or 1/16 size images, you can print even a fast-moving subject without blur.

First scanning

Second scanning

(The subject has moved.)



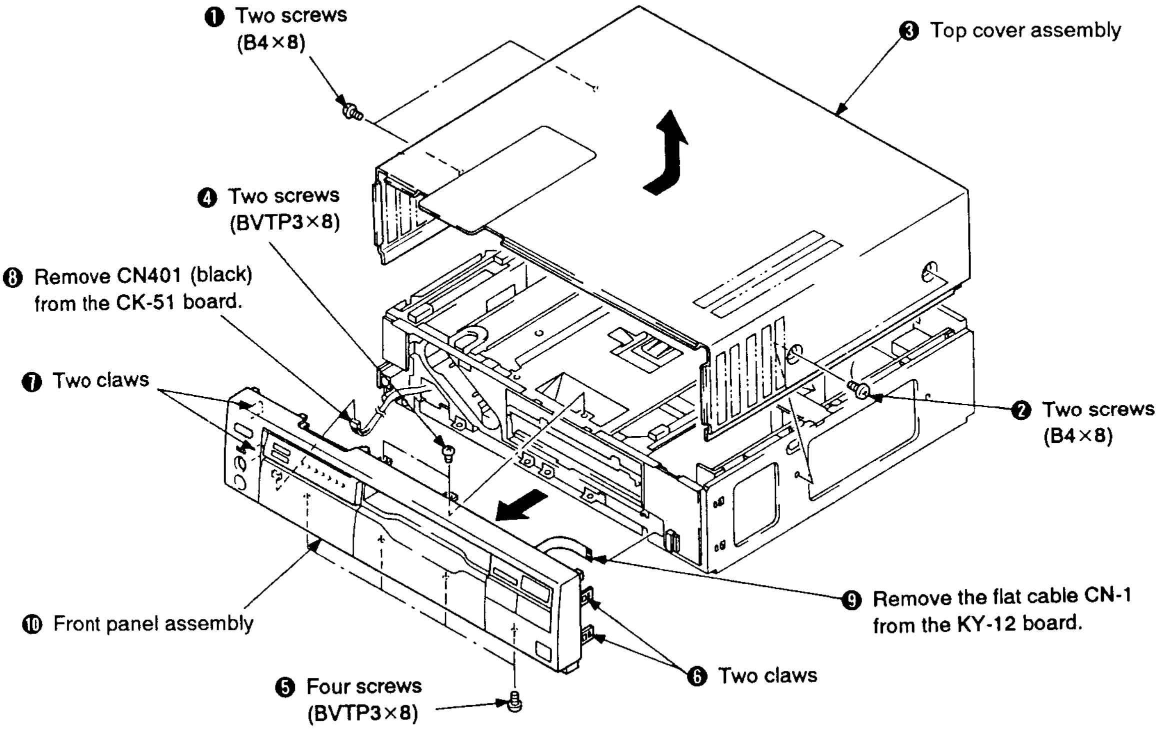
A field image (FIELD A or B)

The other field image (FIELD A or B)

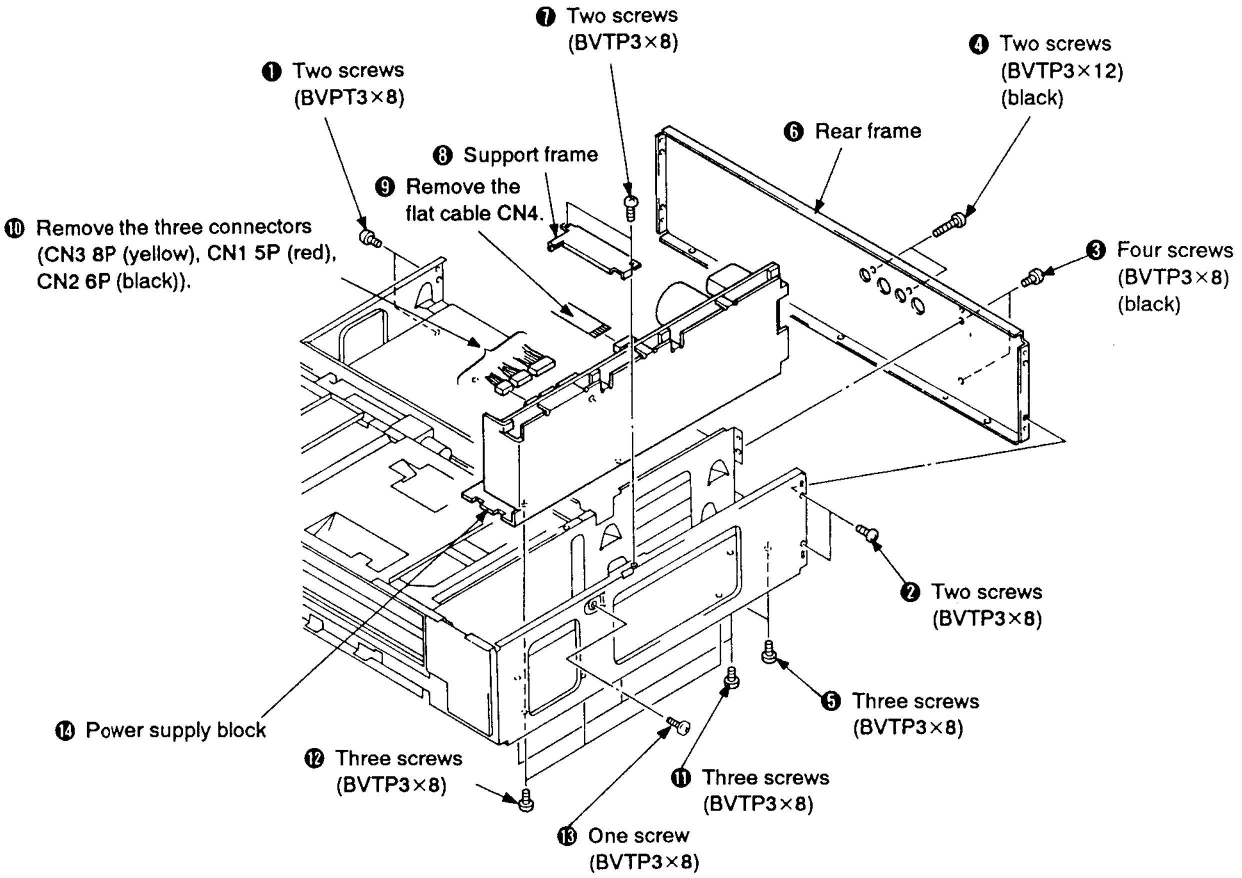
Frame image (FRAME)

SECTION 2
DISASSEMBLY

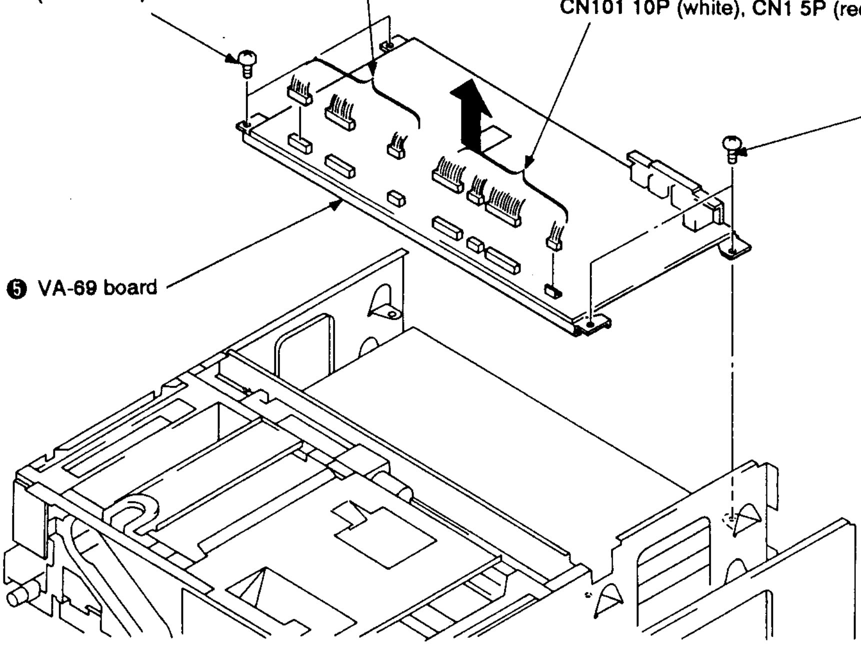
2-1. CABINET SECTION REMOVAL


❶ Two screws (B4×8)
❸ Top cover assembly
❹ Two screws (BVTP3×8)
❽ Remove CN401 (black) from the CK-51 board.
❼ Two claws
❷ Two screws (B4×8)
❾ Remove the flat cable CN-1 from the KY-12 board.
❿ Front panel assembly
❻ Two claws
❺ Four screws (BVTP3×8)

2-2. REAR FRAME AND POWER SUPPLY BLOCK REMOVAL


❼ Two screws (BVTP3×8)
❶ Two screws (BVPT3×8)
❹ Two screws (BVTP3×12) (black)
❻ Rear frame
❽ Support frame
❾ Remove the flat cable CN4.
❿ Remove the three connectors (CN3 8P (yellow), CN1 5P (red), CN2 6P (black)).
❸ Four screws (BVTP3×8) (black)
❷ Two screws (BVTP3×8)
❺ Three screws (BVTP3×8)
⓮ Power supply block
⓬ Three screws (BVTP3×8)
⓫ Three screws (BVTP3×8)
⓭ One screw (BVTP3×8)

2-3. VA-69 BOARD REMOVAL


❶ Remove the three connectors (CN701 6P (white), CN601 9P (yellow), CN602 4P (red)).

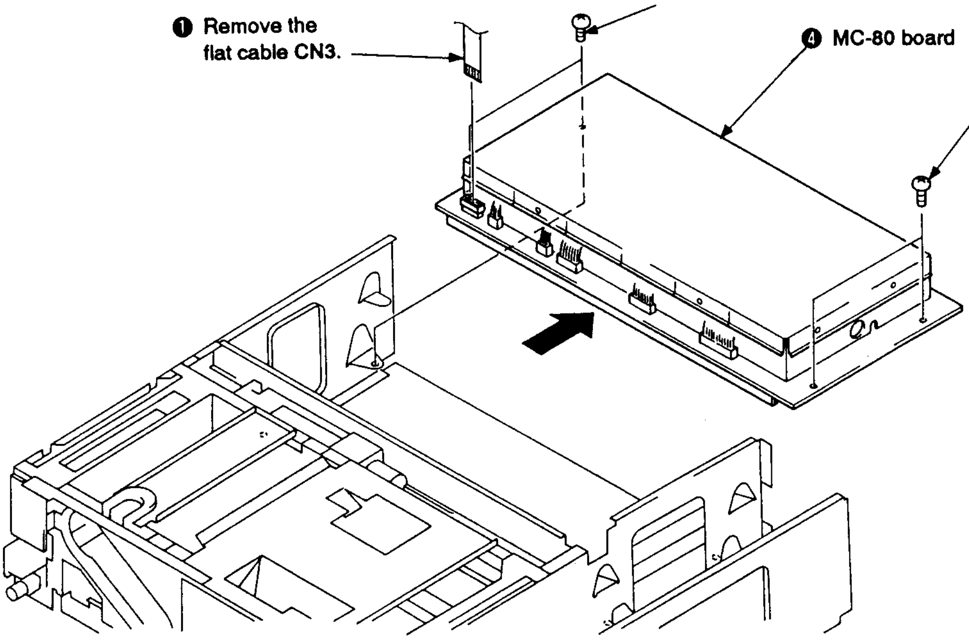
❷ Remove the four connectors (CN403 9P (red), CN402 4P (yellow), CN101 10P (white), CN1 5P (red)).

❸ Two screws (BVTP3×8)

❹ Two screws (BVTP3×8)

❺ VA-69 board

2-4. MC-80 BOARD REMOVAL

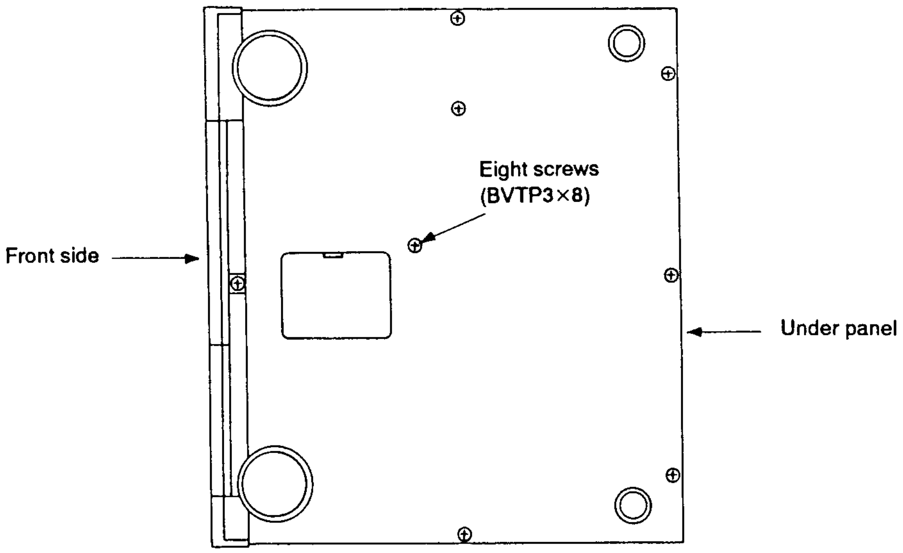

❶ Remove the flat cable CN3.

❷ Two screws (BVTP3×8)

❸ Two screws (BVTP3×8)

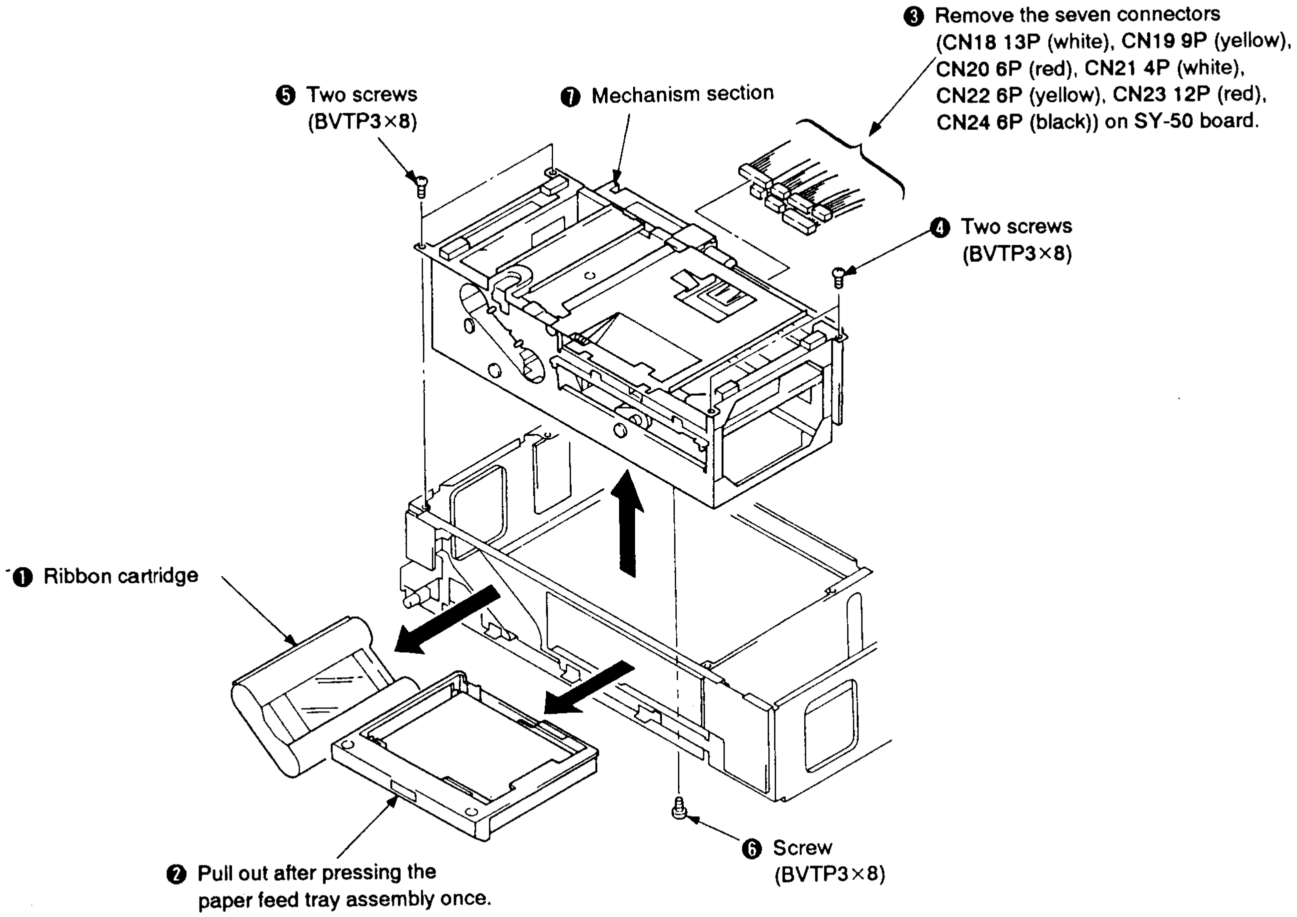
❹ MC-80 board

Note: When checking the MC-80 board, the under panel can be removed by removing the eight screws (BVTP3×8) from the rear side of unit.


Eight screws
(BVTP3×8)
Front side
Under panel

2-5. MECHANISM SECTION REMOVAL

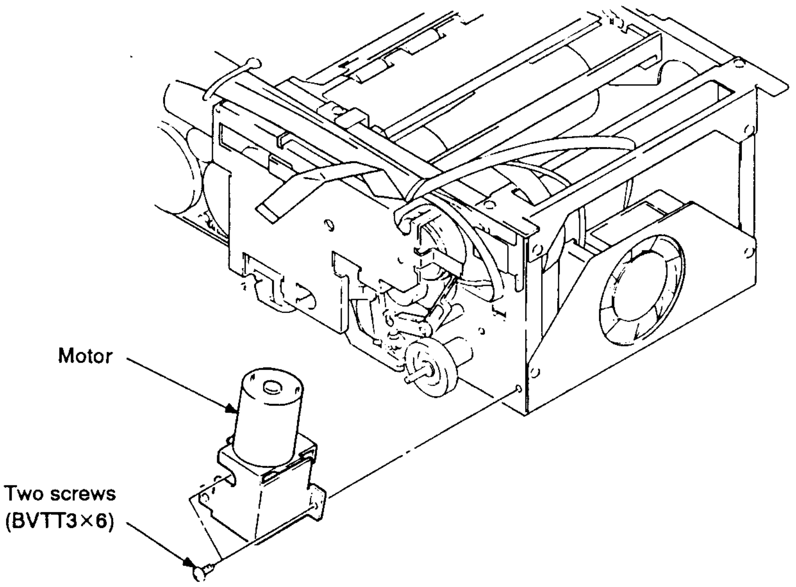
Note: Perform this mechanism section removal after removing the front panel.


❸ Remove the seven connectors (CN18 13P (white), CN19 9P (yellow), CN20 6P (red), CN21 4P (white), CN22 6P (yellow), CN23 12P (red), CN24 6P (black)) on SY-50 board.
❺ Two screws (BVTP3×8)
❼ Mechanism section
❹ Two screws (BVTP3×8)
❶ Ribbon cartridge
❷ Pull out after pressing the paper feed tray assembly once.
❻ Screw (BVTP3×8)

SECTION 3
MECHANISM SECTION REPLACEMENT

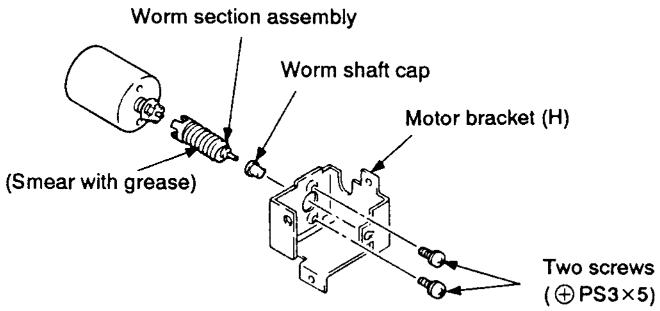
3-1. HEAD DRIVING MOTOR REPLACEMENT

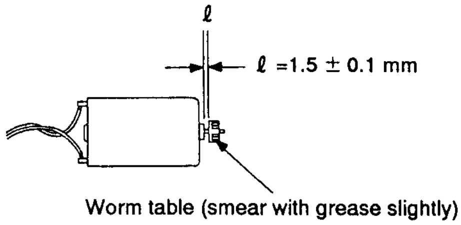
1) Remove the two screws and the head driving assembly.


Motor
Two screws
(BVTT3×6)

2) Remove the two screws, and the motor from the motor bracket (H).
3) Replace the motor.

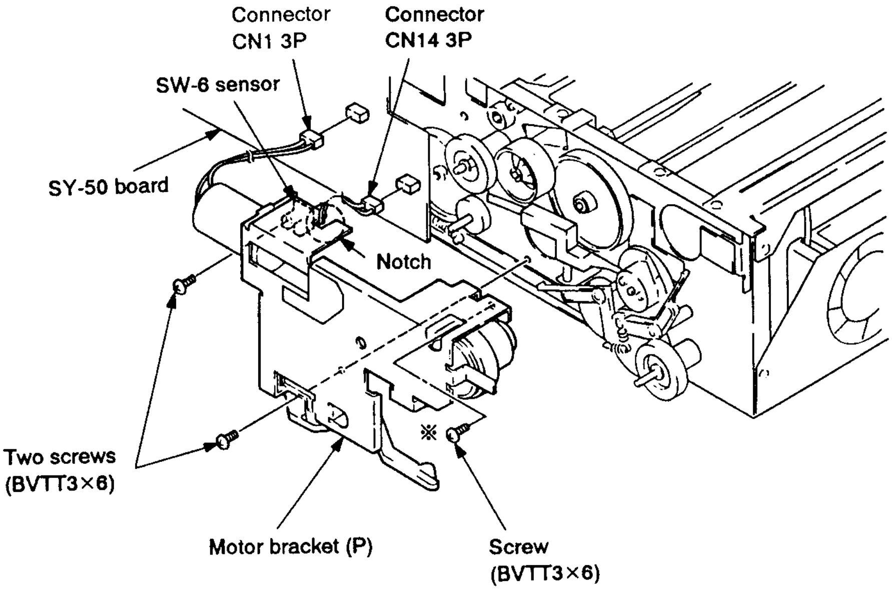
Note: Smear the worm and worm table with Sony grease (SGL-701) (7-622-010-08) when installing.


Worm section assembly
Worm shaft cap
Motor bracket (H)
(Smear with grease)
Two screws
(⊕PS3×5)


ℓ
ℓ =1.5 ± 0.1 mm
Worm table (smear with grease slightly)

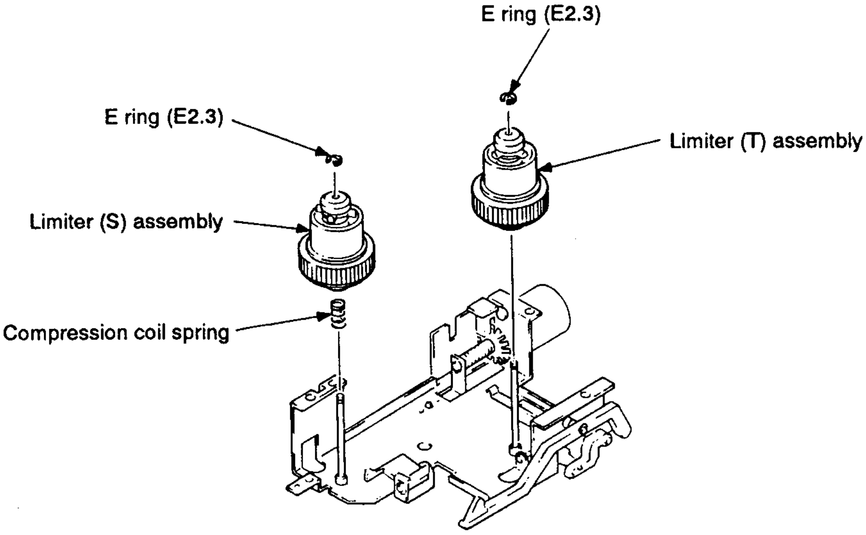
3-2. LIMITER ASSEMBLY REPLACEMENT

1) Remove the three screws and motor bracket (P).
2) Remove the connector CN1 from the motor on the SY-50 board.
3) Remove the connector CN14 of the SW-6 sensor from the SY-50 board.


Connector
CN1 3P
Connector
CN14 3P
SW-6 sensor
SY-50 board
Notch
Two screws
(BVTT3×6)
※
Motor bracket (P)
Screw
(BVTT3×6)

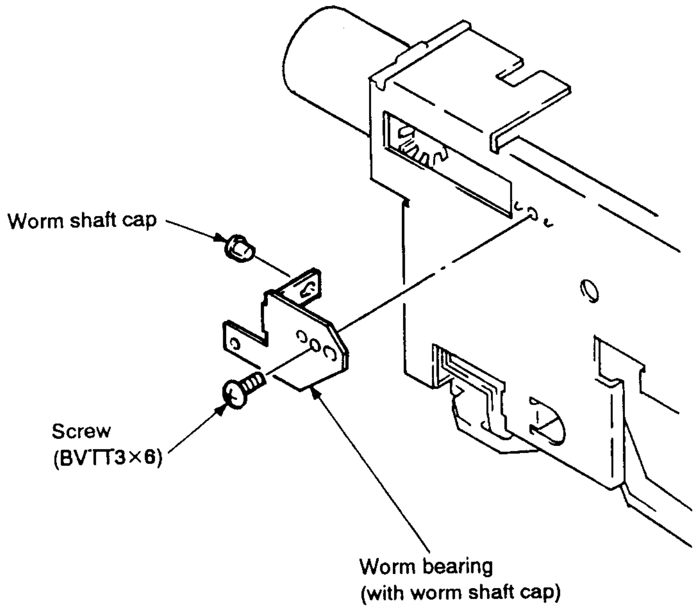
Note: 1) When removing the screw with *, be careful not to touch the gear with the screwdriver.
2) When installing, the harness should be inserted into the notch.

4) Remove the E ring (E2.3), limiter (S) assembly and compression coil spring in order.
5) Remove the E ring (E2.3) and limiter (T) assembly.


E ring (E2.3)
E ring (E2.3)
Limiter (T) assembly
Limiter (S) assembly
Compression coil spring

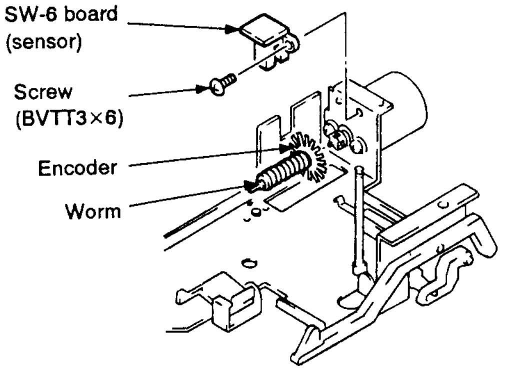
3-3. PLATEN DRIVING MOTOR REPLACEMENT

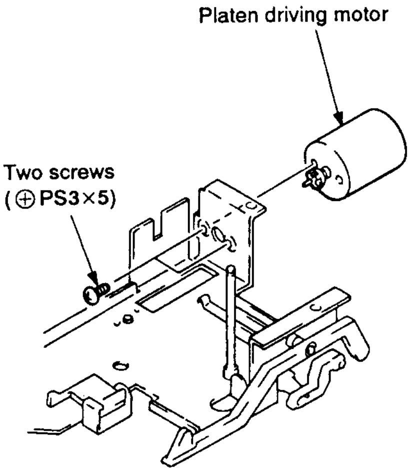
1) Perform steps 1) to 4) of "3-2. LIMITER ASSEMBLY REPLACEMENT".
2) Remove the screw and then the worm bearing and worm shaft cap.

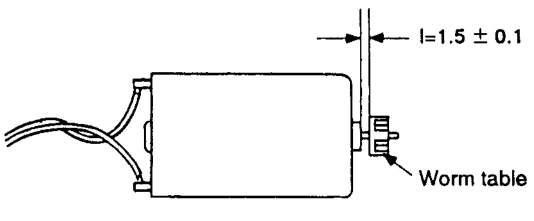

Worm shaft cap
Screw
(BVTT3×6)
Worm bearing
(with worm shaft cap)

3) Remove the screw and then the SW-6 board (sensor), encoder and worm.
4) Remove the two screws and then the platen driving motor.

Note: Smear the worm and worm table with Sony grease (SG-701) (7-622-010-08).


SW-6 board
(sensor)
Screw
(BVTT3×6)
Encoder
Worm

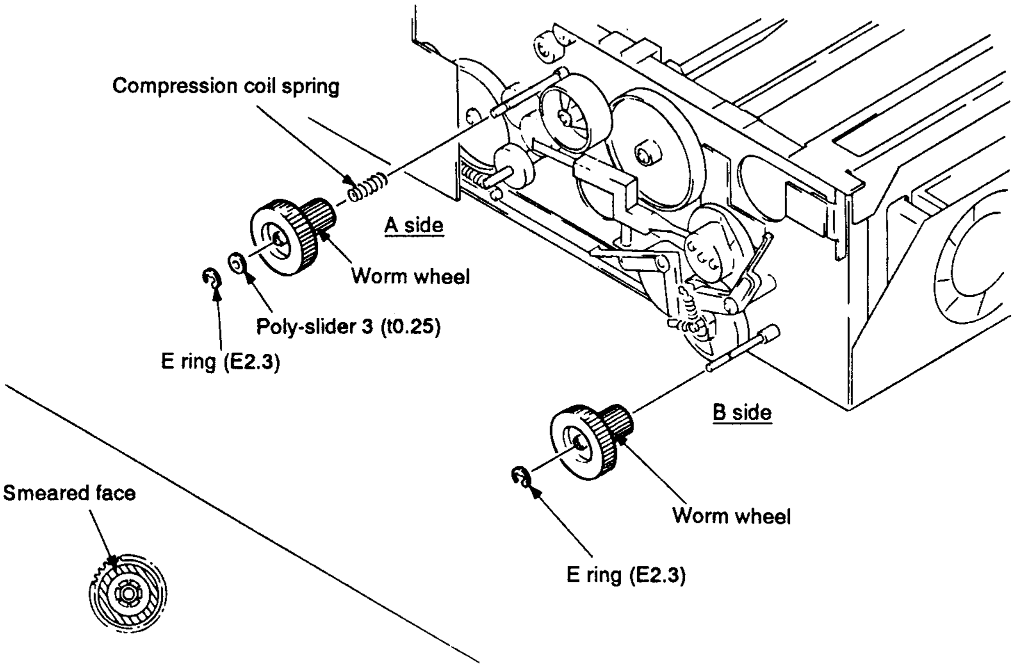

Platen driving motor
Two screws
(⊕PS3×5)


l=1.5 ± 0.1
Worm table

3-4. WORM WHEEL REPLACEMENT

1) Remove the head driving assembly. (Refer to 3-1. 1))
2) Remove the motor bracket (P). (Refer to 3-2. 1))
3) A side
   Remove the E ring (E2.3), poly-slider 3 (t0.25), worm wheel, compression coil spring in order.
   B side
   Remove the E ring (E2.3) and worm wheel in order.

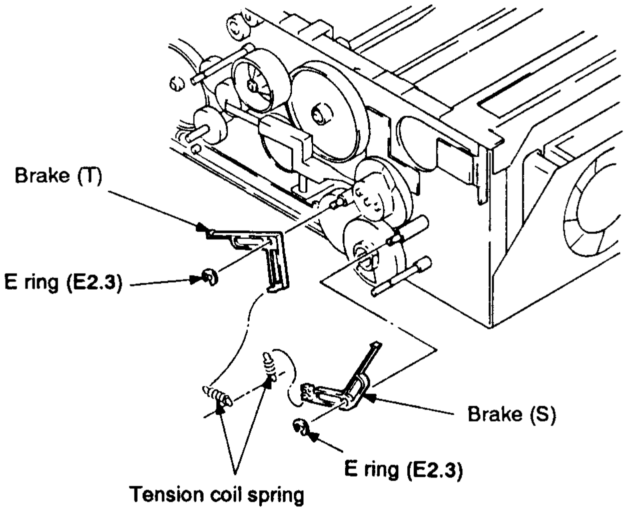
Note: When installing, smear the outside of the worm wheel of side A with Sony grease (SGL-701) (7-662-010-08) as shown in the figure below.



Compression coil spring
A side
Worm wheel
Poly-slider 3 (t0.25)
E ring (E2.3)
Smeared face
B side
Worm wheel
E ring (E2.3)

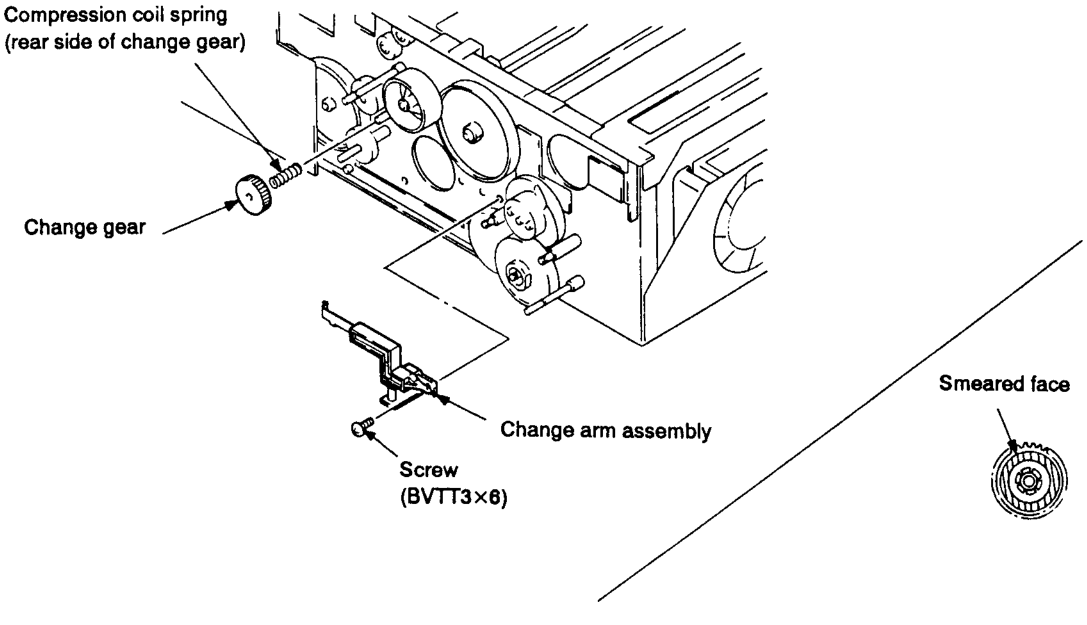
3-5. BRAKE REPLACEMENT

1) Remove the head driving assembly. (Refer to 3-1. 1))
2) Remove the motor bracket (P). (Refer to 3-2. 1))
3) Remove the two E rings (E2.3) and two tension coil springs and then brake (T) and brake (S).


Brake (T)
E ring (E2.3)
Brake (S)
E ring (E2.3)
Tension coil spring

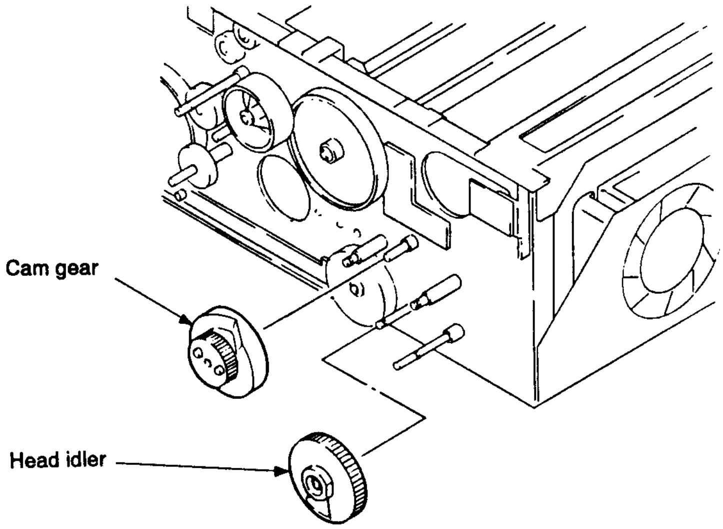
3-6. CHANGE GEAR REPLACEMENT

1) Remove motor bracket (P). (Refer to 3-2. 1))
2) Remove brake (S). (Refer to 3-5. 3))
3) Remove one screw and change arm assembly.
4) Remove the change gear and compression coil spring.


Compression coil spring
(rear side of change gear)
Change gear
Change arm assembly
Screw
(BVTT3×6)
Smeared face

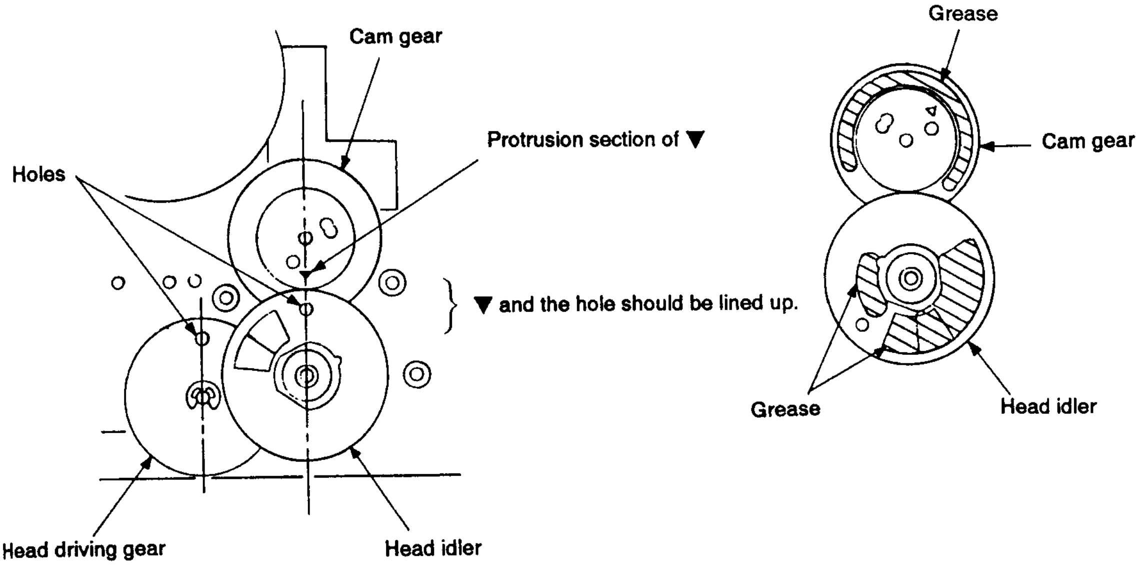
3-7. CAM GEAR AND HEAD IDLER REPLACEMENT

1) Remove the head driving assembly. (Refer to 3-1. 1))
2) Remove the motor bracket (P). (Refer to 3-2. 1))
3) Remove the worm wheel. (Refer to 3-4. 3))
4) Remove the brake. (Refer to 3-5.)
5) Remove the change arm. (Refer to 3-6.)
6) Remove the head idler and cam gear in order.


Cam gear
Head idler

Note: 1) When installing, turn the head driving gear in the clockwise direction and set to the condition in which the hole becomes vertical against the center. Then insert the cam gear with ▼ mark turned down and insert the head idler so that the hole lines up with ▼ of the cam gear, as shown in the figure below.

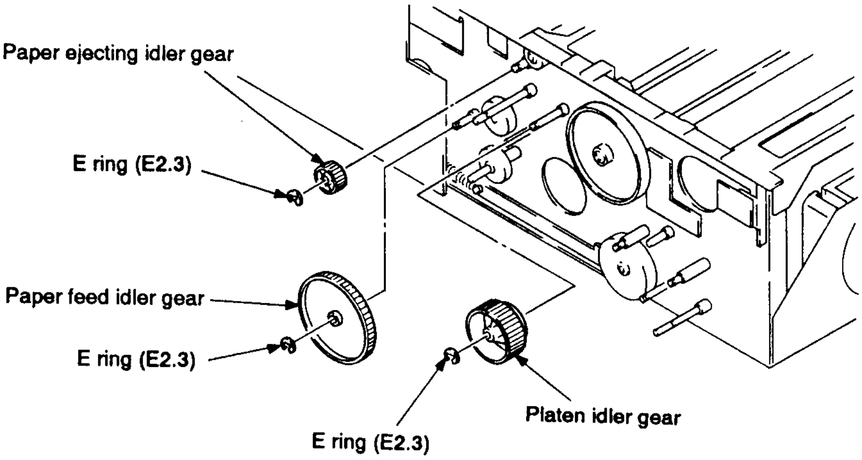
2) Smear the cam gear and head idler with Sony grease (SGL-701) (7-662-010-08).


Cam gear
Protrusion section of ▼
Holes
▼ and the hole should be lined up.
Head driving gear
Head idler
Grease
Cam gear
Grease
Head idler

3-8. IDLER GEAR REPLACEMENT

1) Remove motor bracket (P). (Refer to 3-2. 1))
2) Remove the worm wheel (A side). (Refer to 3-4. 3))
3) Remove brake (S). (Refer to 3-5. 3))
4) Remove the change arm assembly. (Refer to 3-6. 3))
5) Remove the three E rings (E2.3) and then paper feed idler gear, paper ejecting idler gear, platen idler gear.

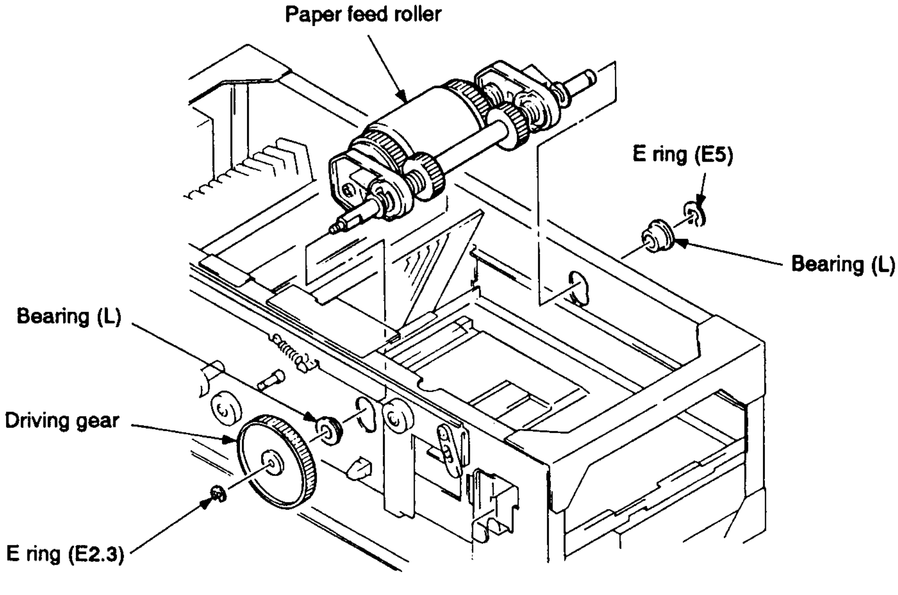
Note: When installing, be careful not to damage the gear section of the platen gear.


Paper ejecting idler gear
E ring (E2.3)
Paper feed idler gear
E ring (E2.3)
Platen idler gear
E ring (E2.3)

3-9. PAPER FEED ROLLER ASSEMBLY REPLACEMENT

1) Remove the E ring (E2.3) and then the driving gear and bearing (L).
2) Remove the E ring (E5) and then the bearing (L) and paper feed roller.

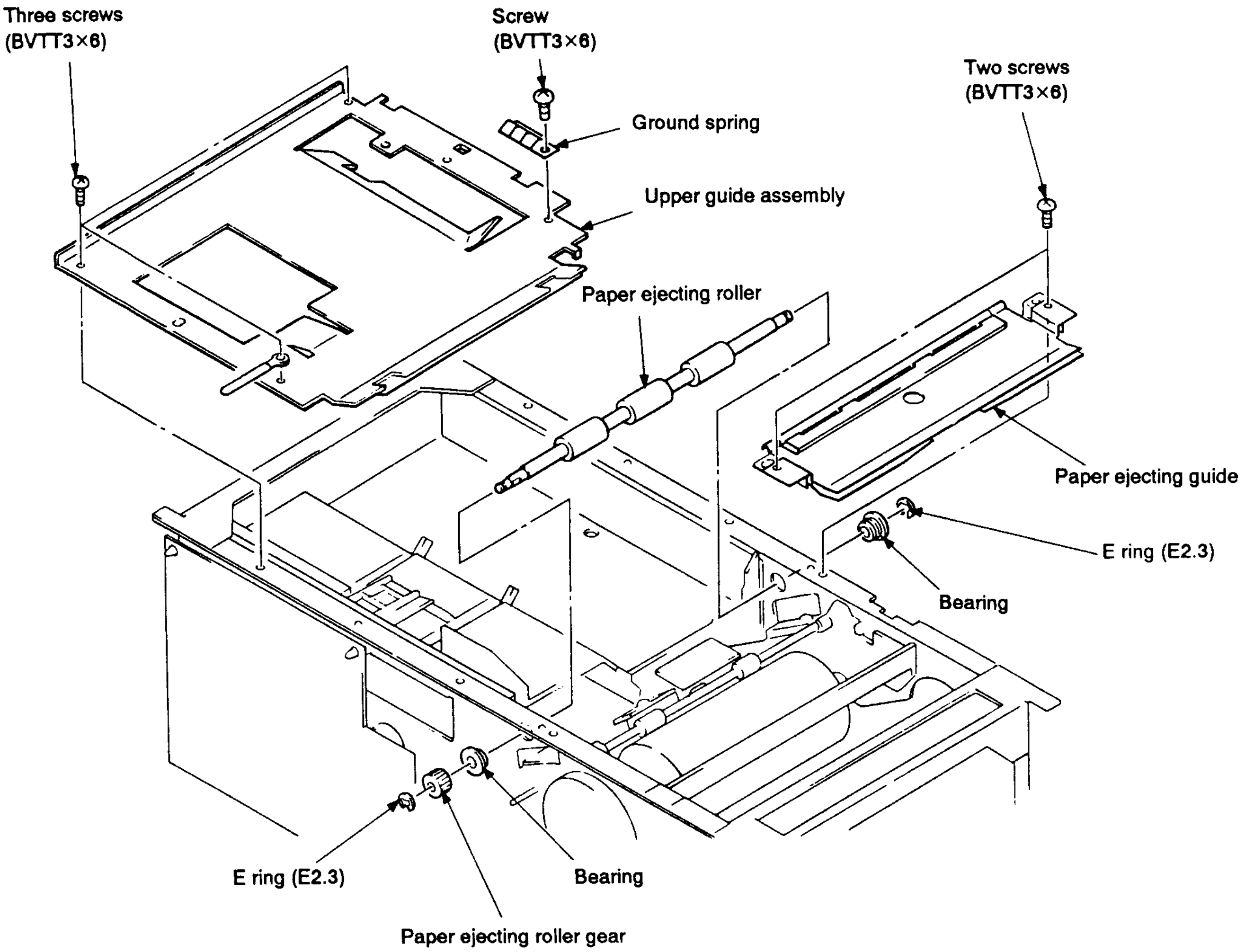
Note: When installing, be careful of the following.
1) Do not touch the rubber section of the paper feed roller.
2) Face the rubber roller of the paper feed roller towards the fan.
3) Adjust the driving gear to the D cut when inserting it into the shaft.


Paper feed roller
E ring (E5)
Bearing (L)
Bearing (L)
Driving gear
E ring (E2.3)

3-10. PAPER EJECTING ROLLER REPLACEMENT

1) Remove the six screws and then the upper guide assembly, ground spring and paper ejecting guide.
2) Remove the E ring (E2.3) and then the paper ejecting roller gear and bearing.
3) Remove the E ring (E2.3), bearing and paper ejecting roller in order.

Note: Adjust the paper ejecting roller gear to the D cut when inserting it into the shaft to install.

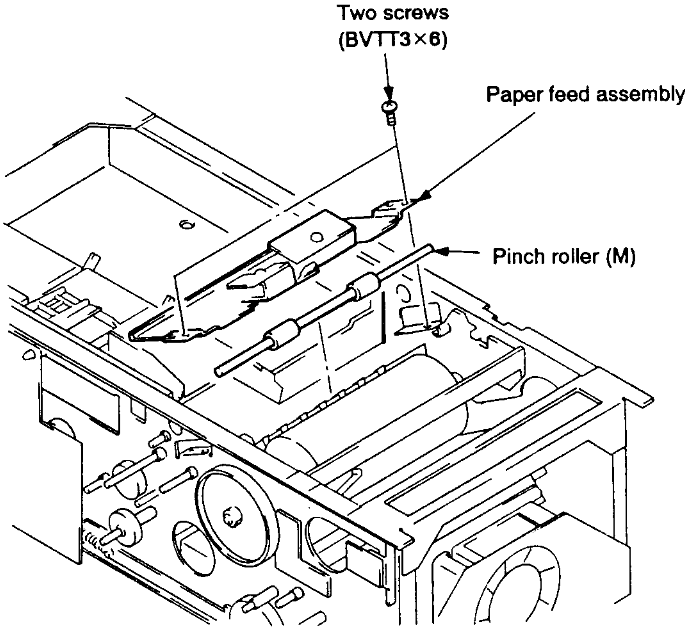

Three screws
(BVTT3×6)
Screw
(BVTT3×6)
Ground spring
Two screws
(BVTT3×6)
Upper guide assembly
Paper ejecting roller
Paper ejecting guide
E ring (E2.3)
Bearing
E ring (E2.3)
Bearing
Paper ejecting roller gear

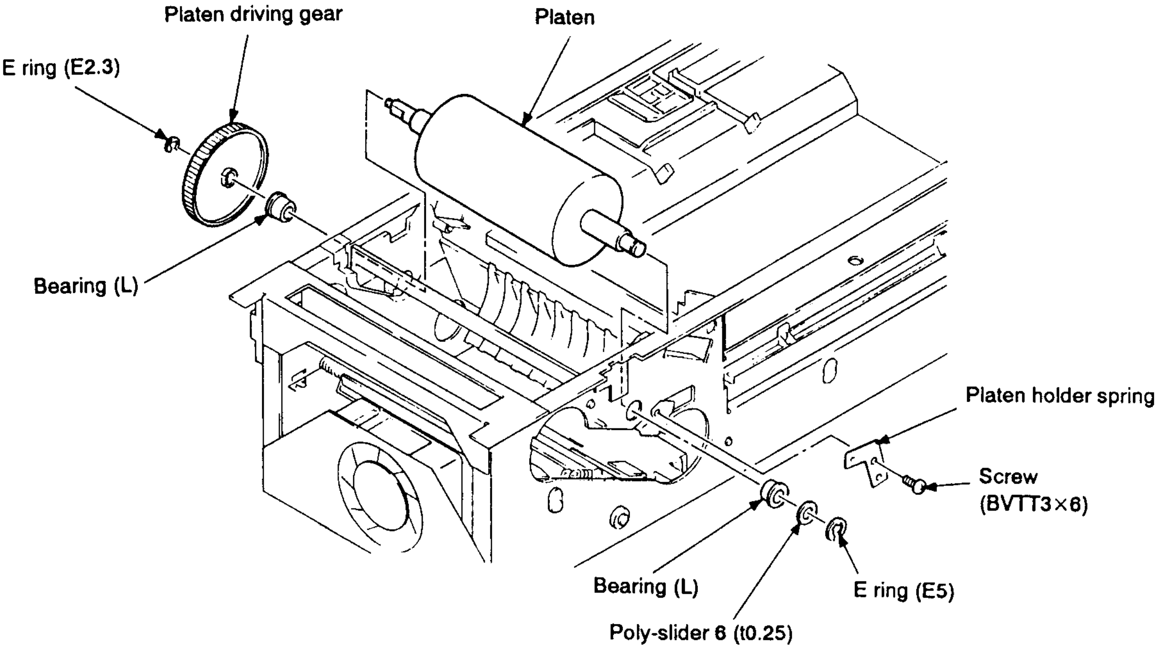
3-11. PLATEN REPLACEMENT

1) Remove motor bracket (P). (Refer to 3-2. 1))
2) Remove the worm wheel (A side). (Refer to 3-4. 3))
3) Remove brake (S). (Refer to 3-5. 3))
4) Remove the change arm assembly. (Refer to 3-6. 3))
5) Remove the platen idler gear. (Refer to 3-8. 5))
6) Remove the two screws and paper feed guide assembly.
7) Remove pinch roller (M).
8) Remove the E ring (E2.3) and then the platen, driving gear and bearing.
9) Remove the screw and then the platen holder spring.
10) Remove the E ring (E5) and then the poly-slider 6 (t0.25), bearing (L) and platen in order.

Note: When installing, be careful of the following.

1) Clean the rubber section of the platen.
2) Always smear the platen driving gear with Sony grease (SGL-701) (7-662-010-08) and adjust the gear to the D cut when inserting it into the shaft.

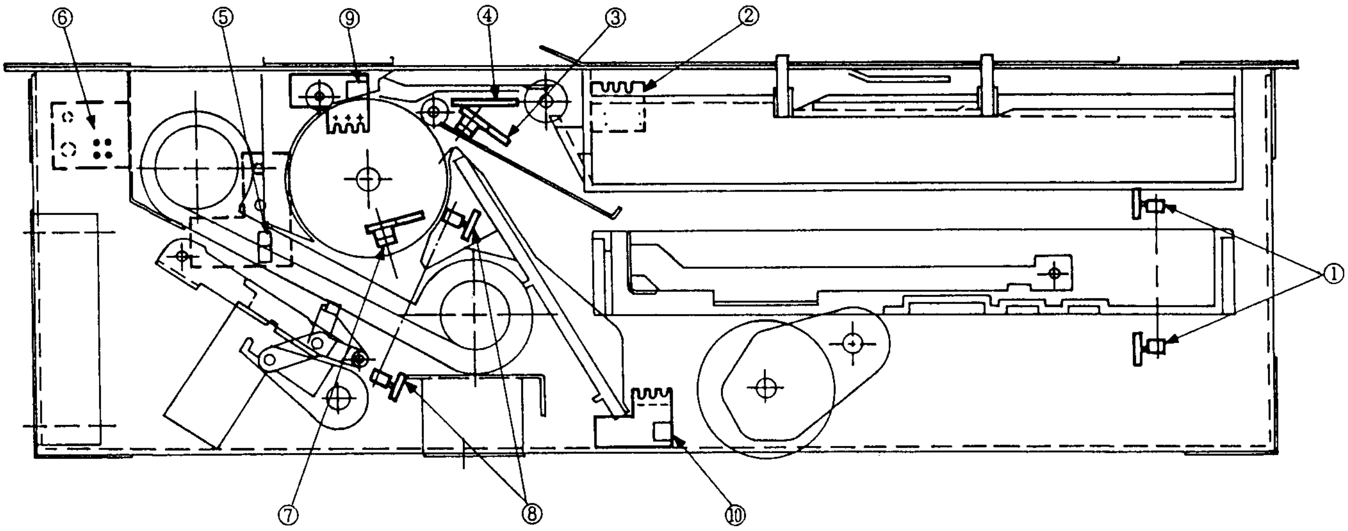

Two screws
(BVTT3×6)
Paper feed assembly
Pinch roller (M)


Platen driving gear
Platen
E ring (E2.3)
Bearing (L)
Platen holder spring
Screw
(BVTT3×6)
Bearing (L)
E ring (E5)
Poly-slider 6 (t0.25)

SECTION 4

EACH SENSOR FUNCTION

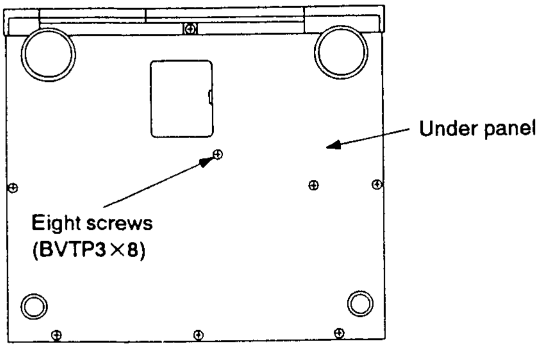
4-1. EACH SENSOR POSITION



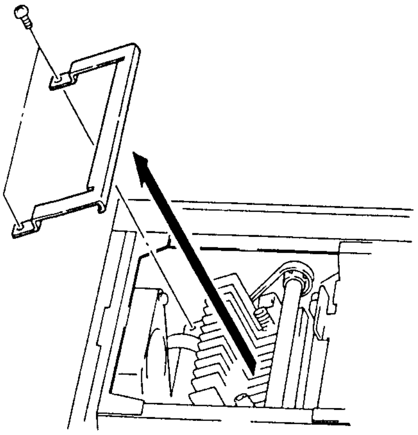
① Paper tray sensor
② FG sensor
③ Paper feed sensor
④ Eject sensor
⑤ Cam, home sensor
⑥ Cartridge sensor
⑦ Paper set sensor
⑧ Ribbon sensor
⑨ Inter lock sensor (TOP)
⑩ Inter lock sensor (BOTTOM)

Replacing procedure

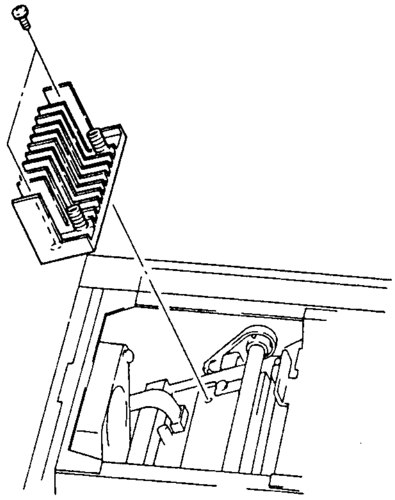
1. Remove the under panel on the rear side of this unit.



2. Remove head guide (S).

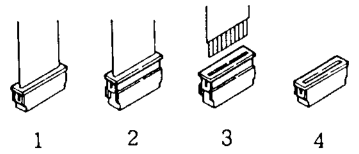


3. Remove the heat sink.



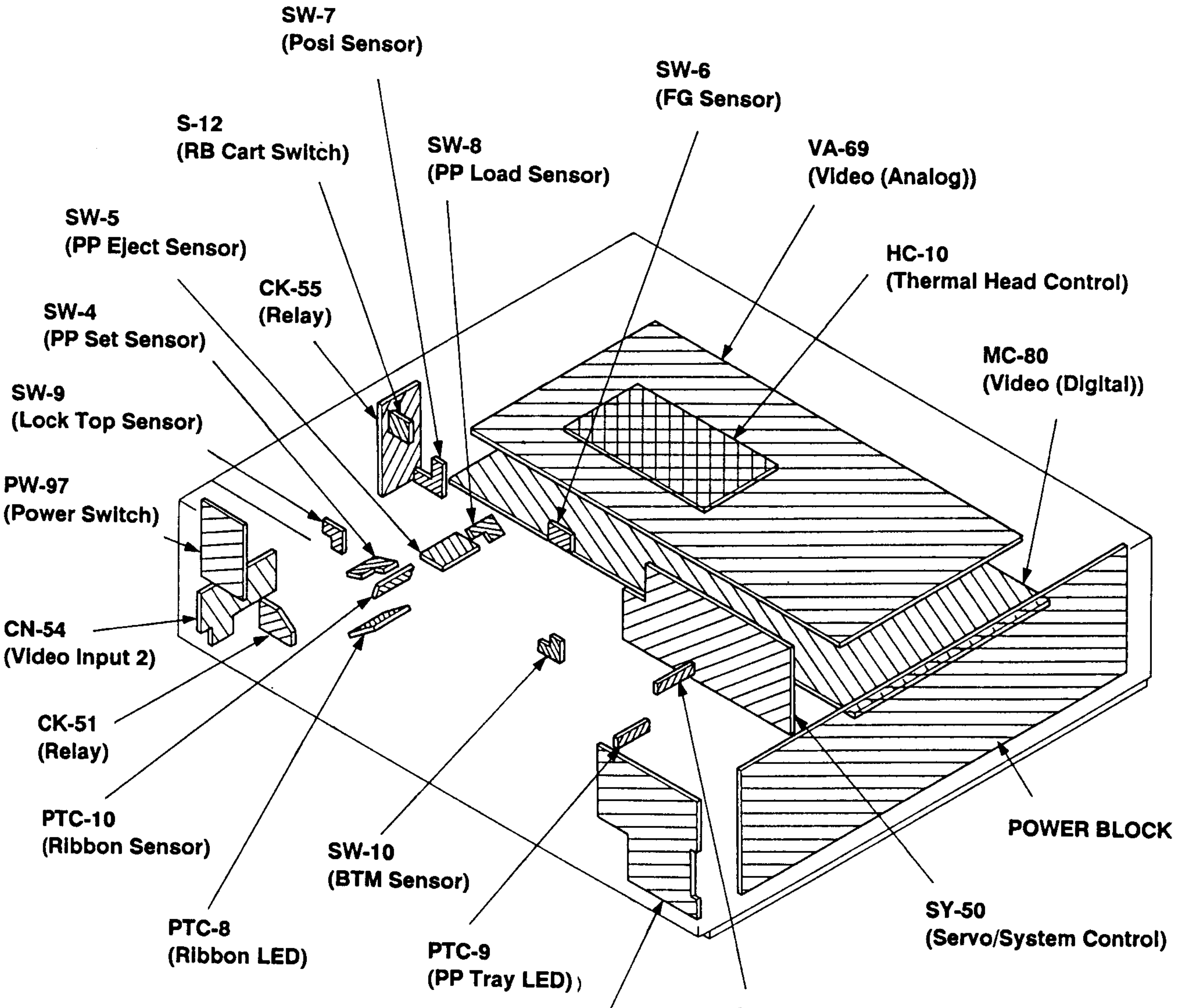
4. Replace the connector lock section of the thermal head after pulling out the flat cable as shown in the figure below.

- How to pull out the connector

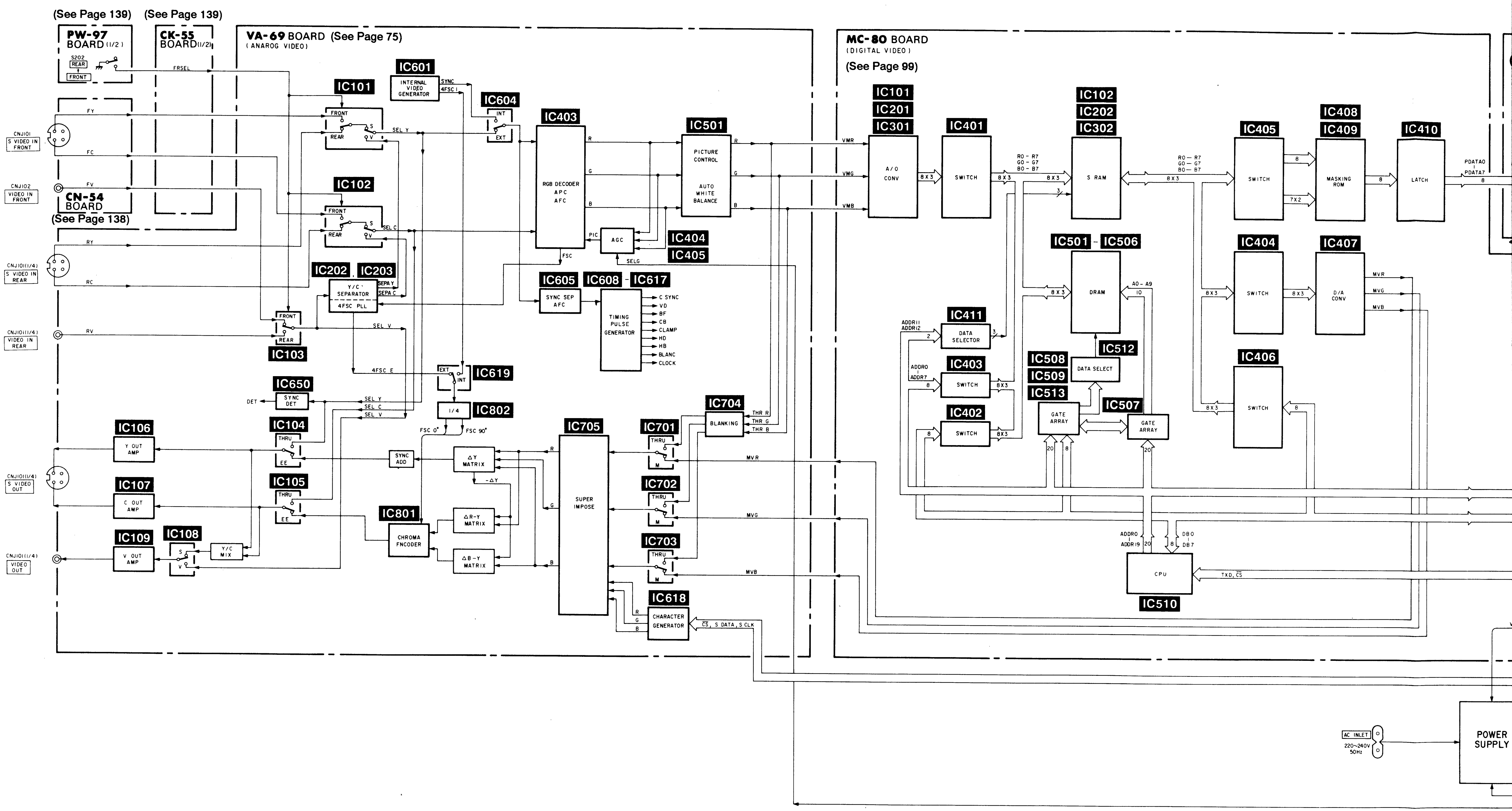


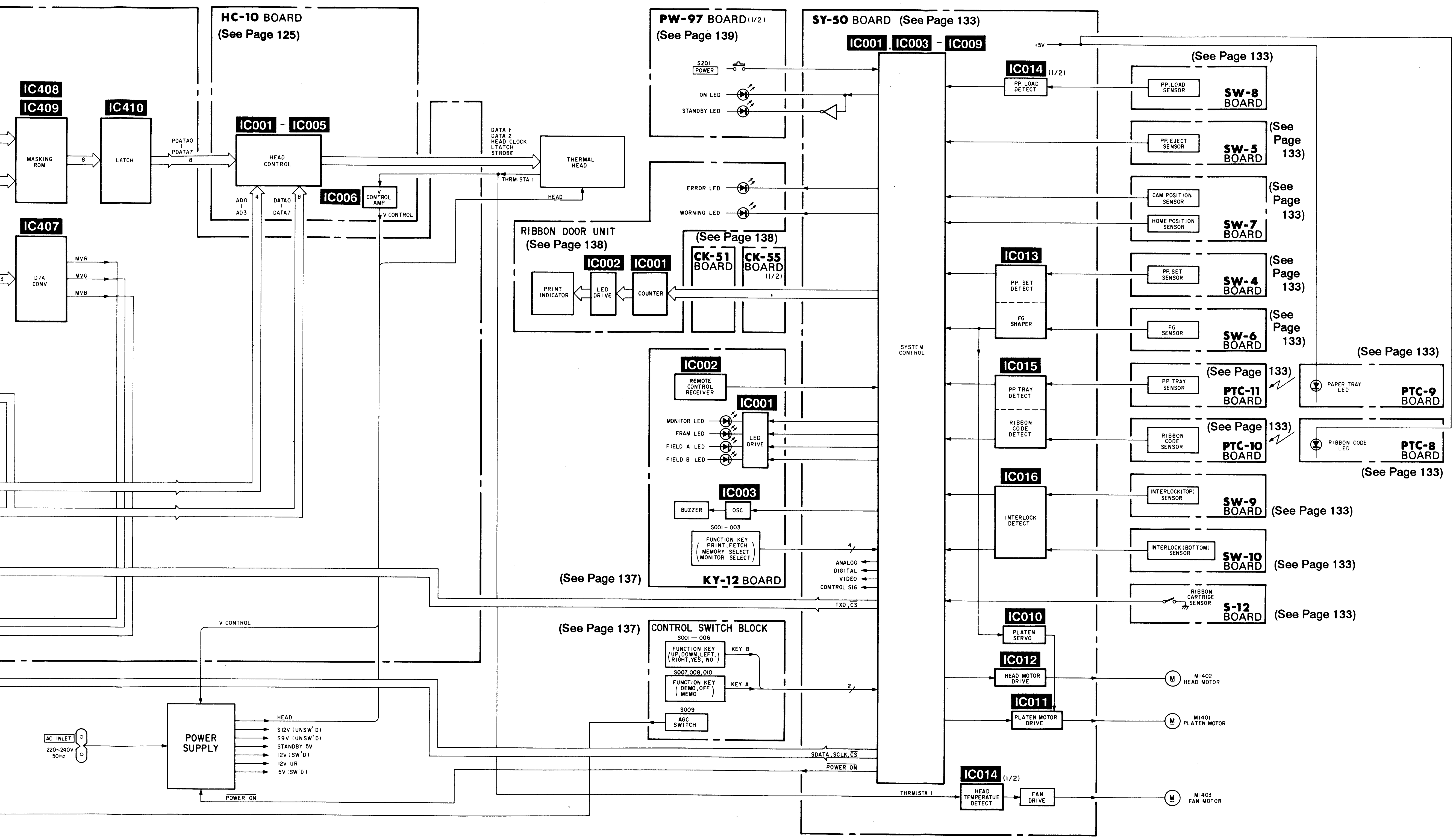
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION

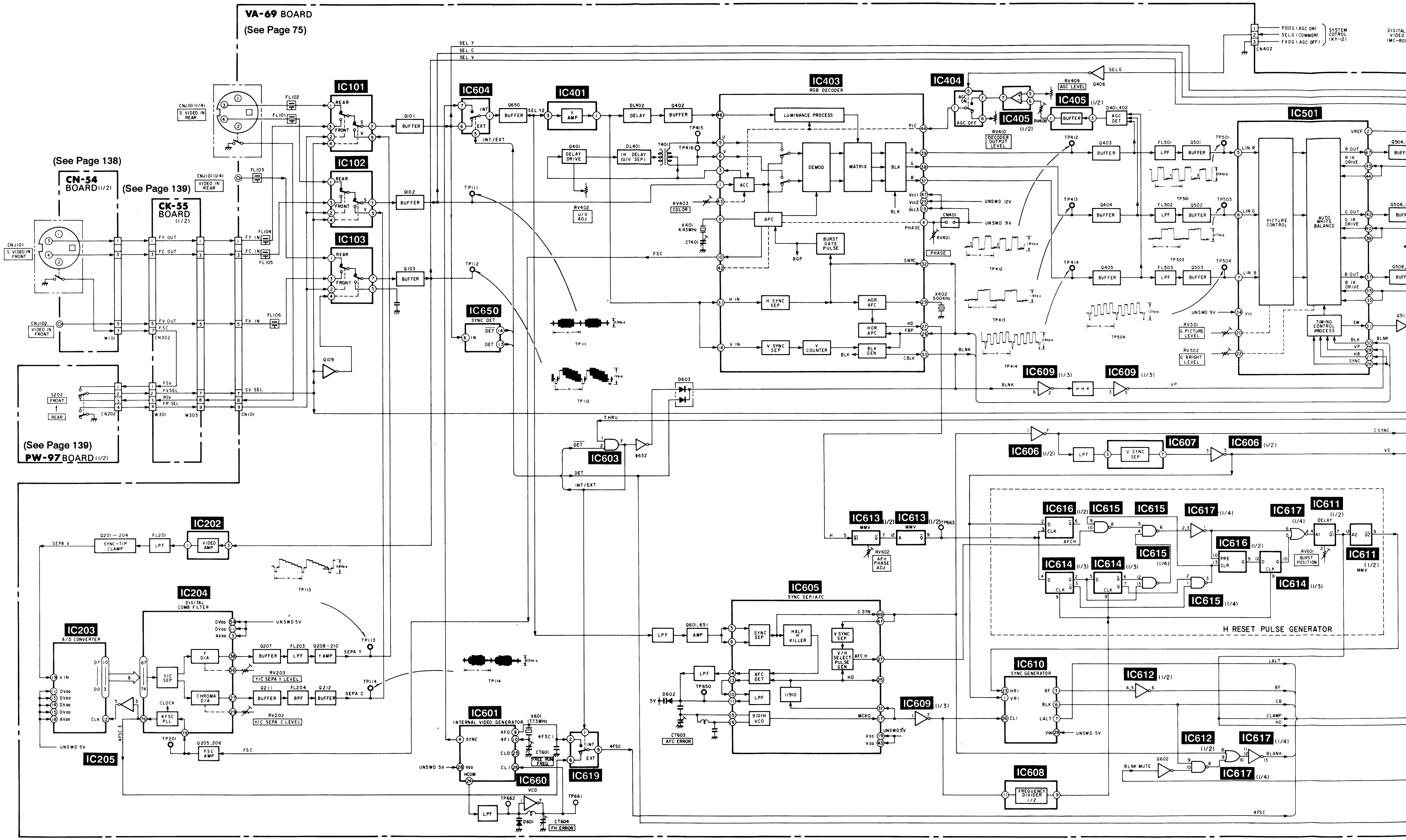

SW-7
(Posi Sensor)
SW-6
(FG Sensor)
S-12
(RB Cart Switch)
SW-8
(PP Load Sensor)
VA-69
(Video (Analog))
SW-5
(PP Eject Sensor)
HC-10
(Thermal Head Control)
CK-55
(Relay)
SW-4
(PP Set Sensor)
MC-80
(Video (Digital))
SW-9
(Lock Top Sensor)
PW-97
(Power Switch)
CN-54
(Video Input 2)
CK-51
(Relay)
PTC-10
(Ribbon Sensor)
POWER BLOCK
SW-10
(BTM Sensor)
PTC-8
(Ribbon LED)
PTC-9
(PP Tray LED)
SY-50
(Servo/System Control)
PTC-11
(PP Tray Sensor)
KY-12
(Function Switch)

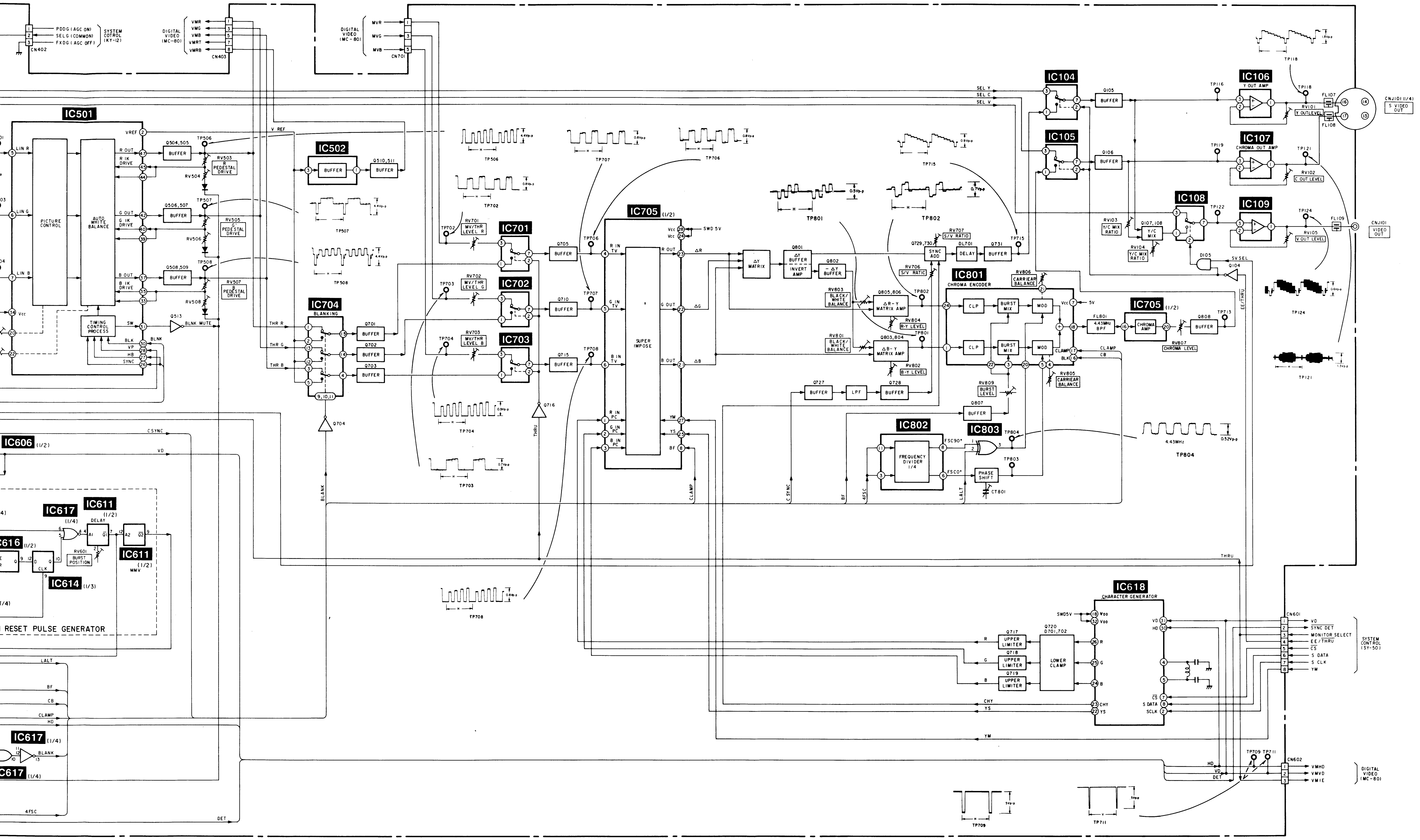
5-2. OVERALL BLOCK DIAGRAM


(See Page 139)
PW-97 BOARD (1/2)
S202
REAR
FRONT
(See Page 139)
CK-55 BOARD (1/2)
FRSEL
CN-54 BOARD
(See Page 138)
VA-69 BOARD (See Page 75)
(ANAROG VIDEO)
MC-80 BOARD
(DIGITAL VIDEO)
(See Page 99)
CNJ101
S VIDEO IN FRONT
CNJ102
VIDEO IN FRONT
CNJ101(1/4)
S VIDEO IN REAR
CNJ101(1/4)
VIDEO IN REAR
CNJ101(1/4)
S VIDEO OUT
CNJ101(1/4)
VIDEO OUT
FY
FC
FV
RY
RC
RV
IC101
FRONT
REAR
S
V
SEL Y
IC102
SEL C
IC601
INTERNAL VIDEO GENERATOR
SYNC
4FSC I
IC604
INT
EXT
IC403
RGB DECODER
APC
AFC
R
G
B
PIC
FSC
AGC
SELG
IC404
IC405
IC501
PICTURE CONTROL
AUTO WHITE BALANCE
IC202
IC203
Y/C SEPARATOR
4FSC PLL
SEPA Y
SEPA C
IC103
SEL V
IC605
SYNC SEP AFC
IC608 - IC617
TIMING PULSE GENERATOR
C SYNC
VD
BF
CB
CLAMP
HD
HB
BLANC
CLOCK
4FSC E
IC619
EXT
INT
IC650
SYNC DET
DET
SEL Y
SEL C
SEL V
1/4
IC802
FSC 0°
FSC 90°
IC104
THRU
EE
IC105
IC106
Y OUT AMP
IC107
C OUT AMP
IC109
V OUT AMP
IC108
Y/C MIX
SYNC ADD
ΔY MATRIX
-ΔY
IC801
CHROMA ENCODER
ΔR-Y MATRIX
ΔB-Y MATRIX
IC705
SUPER IMPOSE
IC701
IC702
IC703
M
IC704
BLANKING
THR R
THR G
THR B
MVR
MVG
MVB
IC618
CHARACTER GENERATOR
CS, S DATA, S CLK
VMR
VMG
VMB
IC101
IC201
IC301
A/D CONV
8X3
IC401
SWITCH
IC102
IC202
IC302
R0 - R7
G0 - G7
B0 - B7
S RAM
IC405
SWITCH
IC408
IC409
MASKING ROM
7X2
IC410
LATCH
PDATA0
PDATA7
IC501 - IC506
DRAM
A0 - A9
10
IC404
SWITCH
IC407
D/A CONV
IC411
DATA SELECTOR
ADDR11
ADDR12
2
3
IC403
ADDR0
ADDR7
SWITCH
IC402
SWITCH
IC508
IC509
IC513
GATE ARRAY
IC512
DATA SELECT
IC507
GATE ARRAY
20
IC406
SWITCH
ADDR0
ADDR19
DB0
DB7
CPU
IC510
TXD, CS
AC INLET
220~240V
50Hz
POWER SUPPLY


IC408
IC409
MASKING ROM
8
IC410
LATCH
PDATA0 | PDATA7
8
HC-10 BOARD
(See Page 125)
IC001 - IC005
HEAD CONTROL
AD0 | AD3
4
DATA0 | DATA7
8
IC006
V CONTROL AMP
V CONTROL
DATA 1
DATA 2
HEAD CLOCK
LTATCH
STROBE
THERMAL HEAD
THRMISTA I
HEAD
IC407
D/A CONV
3
MVR
MVG
MVB
V CONTROL
AC INLET
220~240V 50Hz
POWER SUPPLY
HEAD
S12V (UNSW'D)
S9V (UNSW'D)
STANDBY 5V
12V (SW'D)
12V UR
5V (SW'D)
POWER ON
PW-97 BOARD (1/2)
(See Page 139)
S201 POWER
ON LED
STANDBY LED
ERROR LED
WORNING LED
RIBBON DOOR UNIT
(See Page 138)
IC002
IC001
PRINT INDICATOR
LED DRIVE
COUNTER
(See Page 138)
CK-51 BOARD
CK-55 BOARD (1/2)
IC002
REMOTE CONTROL RECEIVER
IC001
MONITOR LED
FRAM LED
FIELD A LED
FIELD B LED
LED DRIVE
IC003
BUZZER
OSC
S001 - 003
FUNCTION KEY (PRINT, FETCH MEMORY SELECT MONITOR SELECT)
(See Page 137)
KY-12 BOARD
4
ANALOG
DIGITAL
VIDEO
CONTROL SIG
TXD, CS
(See Page 137)
CONTROL SWITCH BLOCK
S001 — 006
FUNCTION KEY (UP, DOWN, LEFT, RIGHT, YES, NO)
KEY B
S007, 008, 010
FUNCTION KEY (DEMO, OFF MEMO)
KEY A
2
S009
AGC SWITCH
SDATA, SCLK, CS
POWER ON
THRMISTA I
SY-50 BOARD (See Page 133)
IC001, IC003 - IC009
SYSTEM CONTROL
+5V
IC014 (1/2)
PP. LOAD DETECT
(See Page 133)
PP. LOAD SENSOR
SW-8 BOARD
PP. EJECT SENSOR
SW-5 BOARD
(See Page 133)
CAM POSITION SENSOR
HOME POSITION SENSOR
SW-7 BOARD
(See Page 133)
IC013
PP. SET DETECT
FG SHAPER
PP. SET SENSOR
SW-4 BOARD
(See Page 133)
FG SENSOR
SW-6 BOARD
(See Page 133)
IC015
PP. TRAY DETECT
RIBBON CODE DETECT
PP. TRAY SENSOR
(See Page 133)
PTC-11 BOARD
(See Page 133)
PAPER TRAY LED
PTC-9 BOARD
RIBBON CODE SENSOR
(See Page 133)
PTC-10 BOARD
RIBBON CODE LED
PTC-8 BOARD
(See Page 133)
IC016
INTERLOCK DETECT
INTERLOCK (TOP) SENSOR
SW-9 BOARD
(See Page 133)
INTERLOCK (BOTTOM) SENSOR
SW-10 BOARD
(See Page 133)
RIBBON CARTRIGE SENSOR
S-12 BOARD
(See Page 133)
IC010
PLATEN SERVO
IC012
HEAD MOTOR DRIVE
M
M1402 HEAD MOTOR
IC011
PLATEN MOTOR DRIVE
M
M1401 PLATEN MOTOR
IC014 (1/2)
HEAD TEMPERATUE DETECT
FAN DRIVE
M
M1403 FAN MOTOR

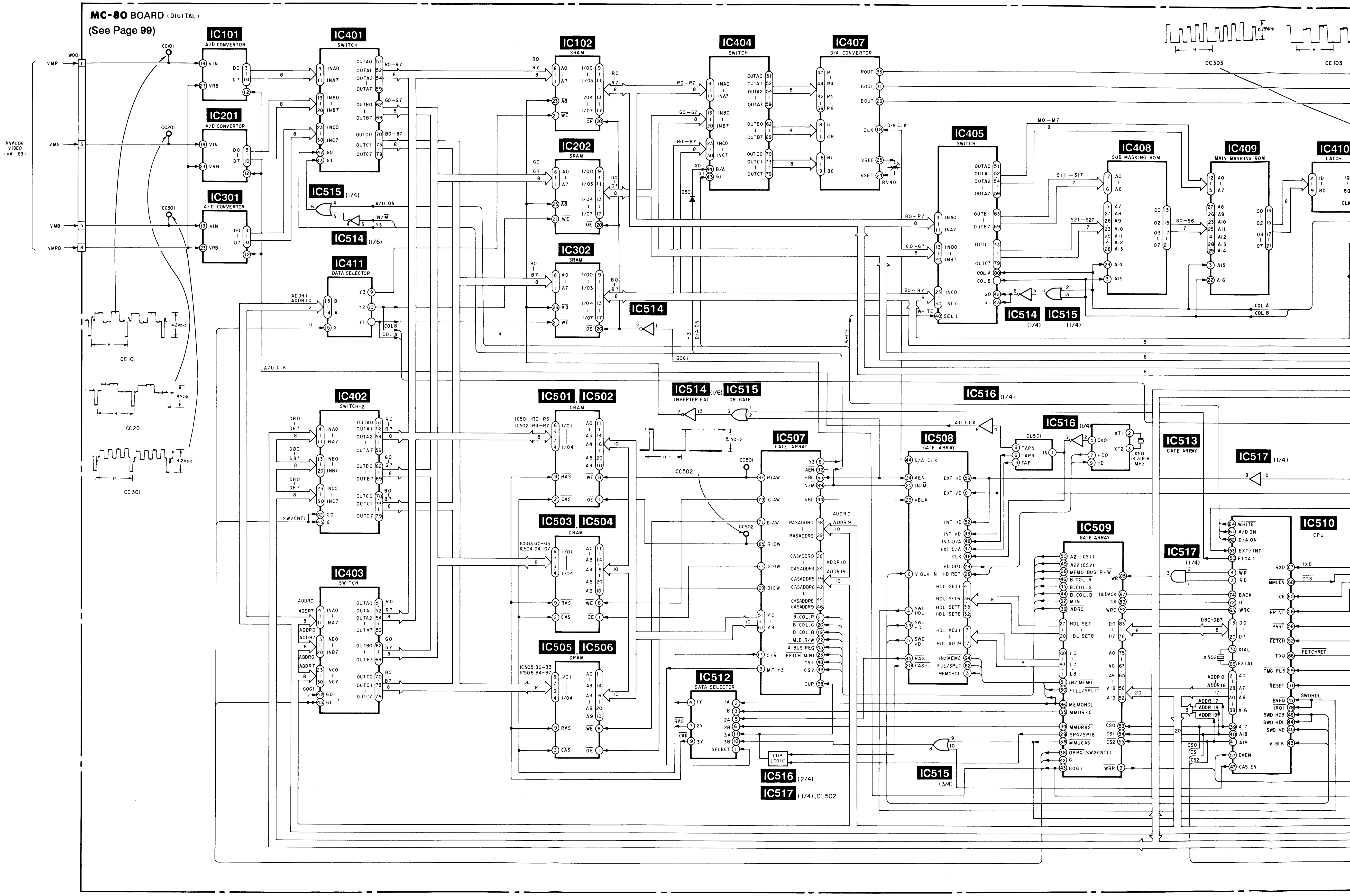
5-3. VIDEO (ANALOG) BLOCK DIAGRAM

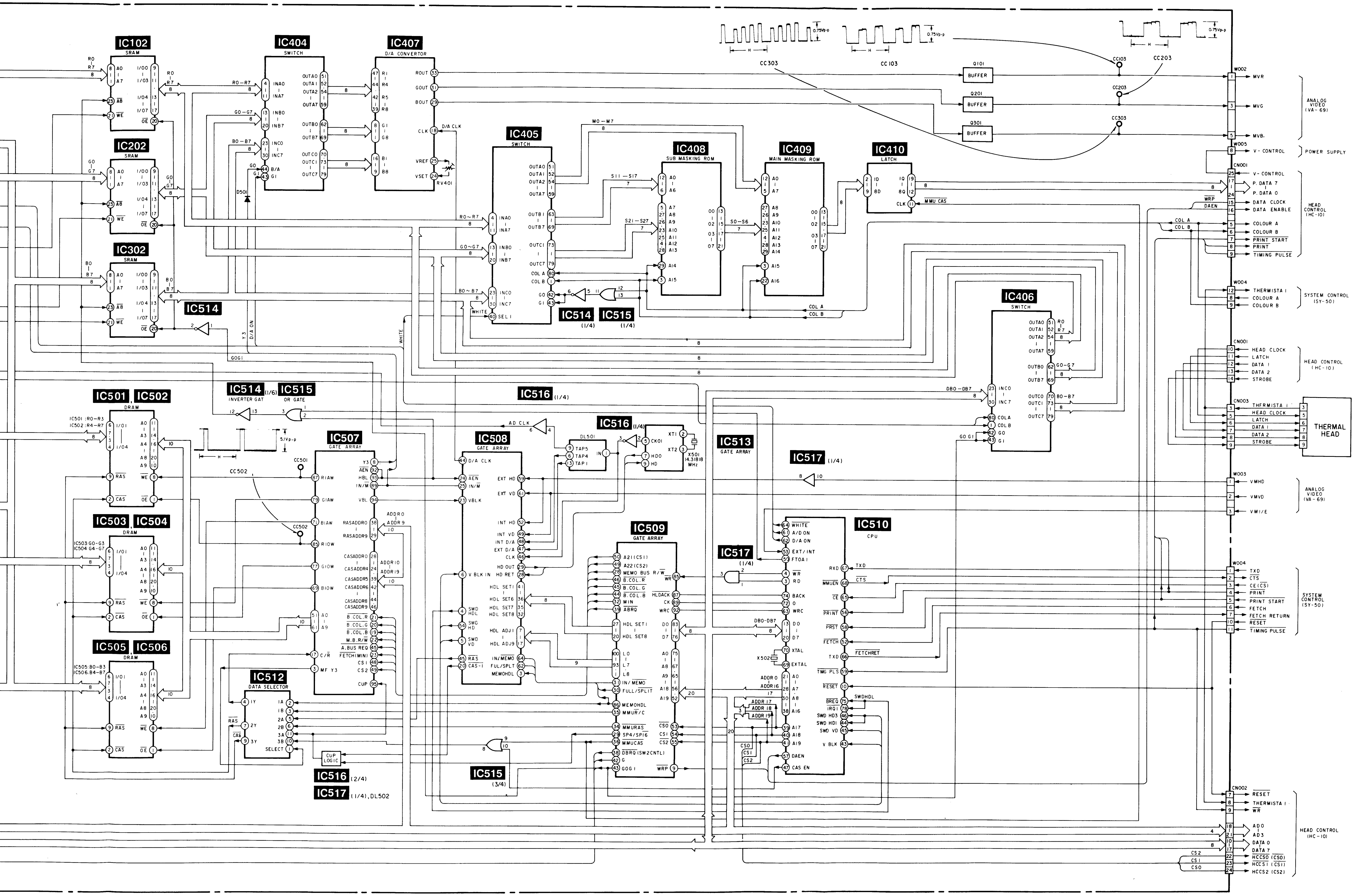

VA-69 BOARD
(See Page 75)
(See Page 138)
CN-54 BOARD (1/2)
(See Page 139)
CK-55 BOARD (1/2)
(See Page 139)
PW-97 BOARD (1/2)
IC101
IC102
IC103
IC604
IC401
IC403
RGB DECODER
IC404
IC405
IC501
IC650
SYNC DET
IC603
IC609
IC606
IC607
IC613
IC616
IC615
IC617
IC611
IC614
H RESET PULSE GENERATOR
IC605
SYNC SEP/AFC
IC610
SYNC GENERATOR
IC612
IC608
FREQUENCY DIVIDER 1/2
IC601
INTERNAL VIDEO GENERATOR
IC660
VCO
IC619
IC202
VIDEO AMP
IC204
DIGITAL COMB FILTER
IC203
A/D CONVERTER
IC205
BUFFER
Y AMP
DELAY
1H DELAY (U/V SEP)
DELAY DRIVE
LUMINANCE PROCESS
DEMOD
MATRIX
BLK
ACC
APC
BURST GATE PULSE
H SYNC SEP
V SYNC SEP
V COUNTER
HOR. AFC
HOR. APC
BLK GEN
AGC DET
LPF
PICTURE CONTROL
AUTO WHITE BALANCE
TIMING CONTROL PROCESS
SYNC-TIP CLAMP
Y/C SEP
Y D/A
CHROMA D/A
4FSC PLL
FSC AMP
BPF
AMP
SYNC SEP
HALF H KILLER
V/H SELECT PULSE GEN
AFC DET
1/910
910fH VCO
MMV
DELAY
SYSTEM CONTROL (KY-12)
DIGITAL VIDEO (MC-80)
CN402
SEL Y
SEL C
SEL V
FSC
4FSC
C SYNC
VD
BLNK
UNSWD 12V
UNSWD 9V
UNSWD 5V
RV401 PHASE
RV402 U/V ADJ
RV403 COLOR
RV409 AGC LEVEL
RV410 DECODER OUTPUT LEVEL
RV501 G PICTURE LEVEL
RV502 G BRIGHT LEVEL
RV601 BURST POSITION
RV602 AFH PHASE ADJ
RV202 Y/C SEPA C LEVEL
RV203 Y/C SEPA Y LEVEL
CT601 FREE RUN FREQ.
CT603 AFC ERROR
CT604 FH ERROR
X401 4.43MHz
X402 500KHz
X601 17.73MHz
S202 FRONT REAR
CNJ101 S VIDEO IN FRONT
CNJ102 VIDEO IN FRONT
CNJ101(1/4) S VIDEO IN REAR
CNJ101(1/4) VIDEO IN REAR
TP111
TP112
TP113
TP114
TP412
TP413
TP414
TP503
TP504



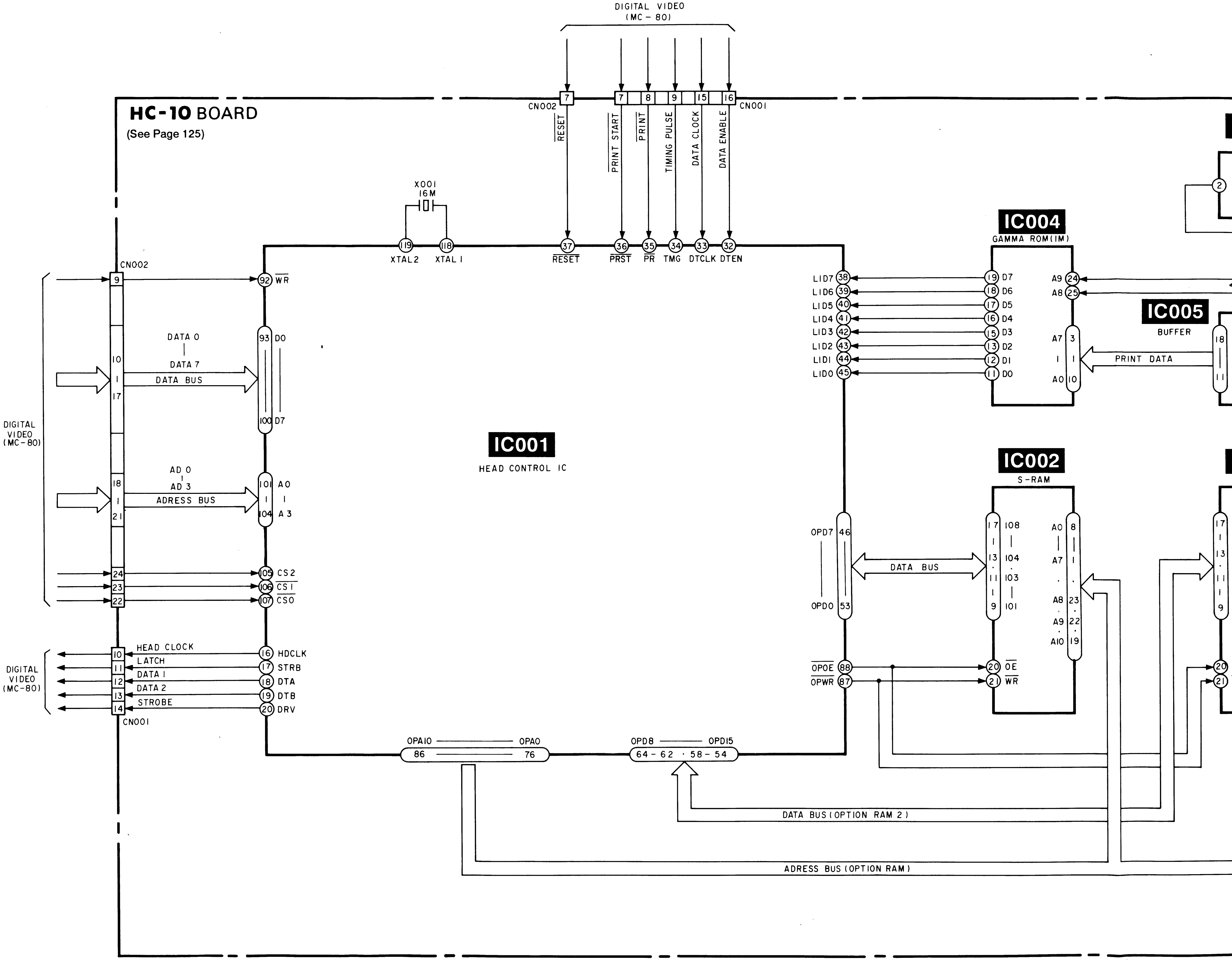
PDDG (AGC ON)
SELG (COMMON)
FXDG (AGC OFF)
SYSTEM COTROL (KY-12)
CN402
DIGITAL VIDEO (MC-80)
VMR
VMG
VMB
VMRT
VMRB
CN403
DIGITAL VIDEO (MC-80)
MVR
MVG
MVB
CN701
IC501
VREF
LIN R
LIN G
LIN B
PICTURE CONTROL
AUTO WHITE BALANCE
R OUT
R IK DRIVE
G OUT
G IK DRIVE
B OUT
B IK DRIVE
Q504,505
Q506,507
Q508,509
BUFFER
TP506
TP507
TP508
RV503 R PEDESTAL DRIVE
RV504
RV505 G PEDESTAL DRIVE
RV506
RV507 B PEDESTAL DRIVE
RV508
TIMING CONTROL PROCESS
SW
BLK
VP
HB
SYNC
BLNK
Q513
BLNK MUTE
Vcc
V REF
IC502
Q510,511
IC704
BLANKING
THR R
THR G
THR B
Q701
Q702
Q703
Q704
IC701
IC702
IC703
RV701 MV/THR LEVEL R
RV702 MV/THR LEVEL G
RV703 MV/THR LEVEL B
TP702
TP703
TP704
Q705
Q710
Q715
TP706
TP707
TP708
Q716
THRU
BLANK
IC705 (1/2)
SWD 5V
R IN TV
G IN TV
B IN TV
R IN PC
G IN PC
B IN PC
SUPER IMPOSE
R OUT
G OUT
B OUT
YM
YS
BF
CLAMP
ΔR
ΔG
ΔB
ΔY MATRIX
Q801
ΔY BUFFER
INVERT AMP
Q802
-ΔY BUFFER
Q729,730
SYNC ADD
RV707 S/V RATIO
DL701
DELAY
Q731
TP715
RV706 S/V RATIO
RV803 BLACK/WHITE BALANCE
Q805,806
ΔR-Y MATRIX AMP
RV804 R-Y LEVEL
RV801 BLACK/WHITE BALANCE
Q803,804
ΔB-Y MATRIX AMP
RV802 B-Y LEVEL
TP802
TP801
Q727
LPF
Q728
IC801
CHROMA ENCODER
CLP
BURST MIX
MOD
RV806 CARRIEAR BALANCE
RV805 CARRIEAR BALANCE
RV809 BURST LEVEL
Q807
FL801 4.43MHz BPF
IC705 (1/2)
CHROMA AMP
RV807 CHROMA LEVEL
Q808
TP713
IC802
FREQUENCY DIVIDER 1/4
FSC90°
FSC0°
IC803
TP804
TP803
PHASE SHIFT
CT801
C SYNC
BF
4FSC
LALT
4.43MHz
0.52Vp-p
TP804
SEL Y
SEL C
SEL V
IC104
IC105
Q105
Q106
IC106
Y OUT AMP
IC107
CHROMA OUT AMP
TP116
TP118
TP119
TP121
RV101 Y OUTLEVEL
RV102 C OUT LEVEL
FL107
FL108
CNJ101 (1/4) S VIDEO OUT
IC108
RV103 Y/C MIX RATIO
Q107,108
Y/C MIX
RV104 Y/C MIX RATIO
TP122
IC109
TP124
RV105 V OUT LEVEL
FL109
CNJ101 VIDEO OUT
D105
SV SEL
Q104
EE/THRU
TP124
TP121
IC606 (1/2)
C SYNC
VD
IC617 (1/4)
IC611 (1/2) DELAY
IC616 (1/2)
IC614 (1/3)
RV601 BURST POSITION
IC611 (1/2) MMV
RESET PULSE GENERATOR
LALT
BF
CB
CLAMP
HD
IC617 (1/4)
BLANK
IC617 (1/4)
4FSC
DET
THRU
IC618
CHARACTER GENERATOR
SWD5V
VDD
Q720 D701,702
LOWER CLAMP
Q717
Q718
Q719
UPPER LIMITER
CHY
YS
YM
VD
HD
CS
S DATA
SCLK
CN601
VD
SYNC DET
MONITOR SELECT
EE/THRU
CS
S DATA
S CLK
YM
SYSTEM CONTROL (SY-50)
TP709
TP711
CN602
VMHD
VMVD
VMIE
DIGITAL VIDEO (MC-80)
TP709
TP711

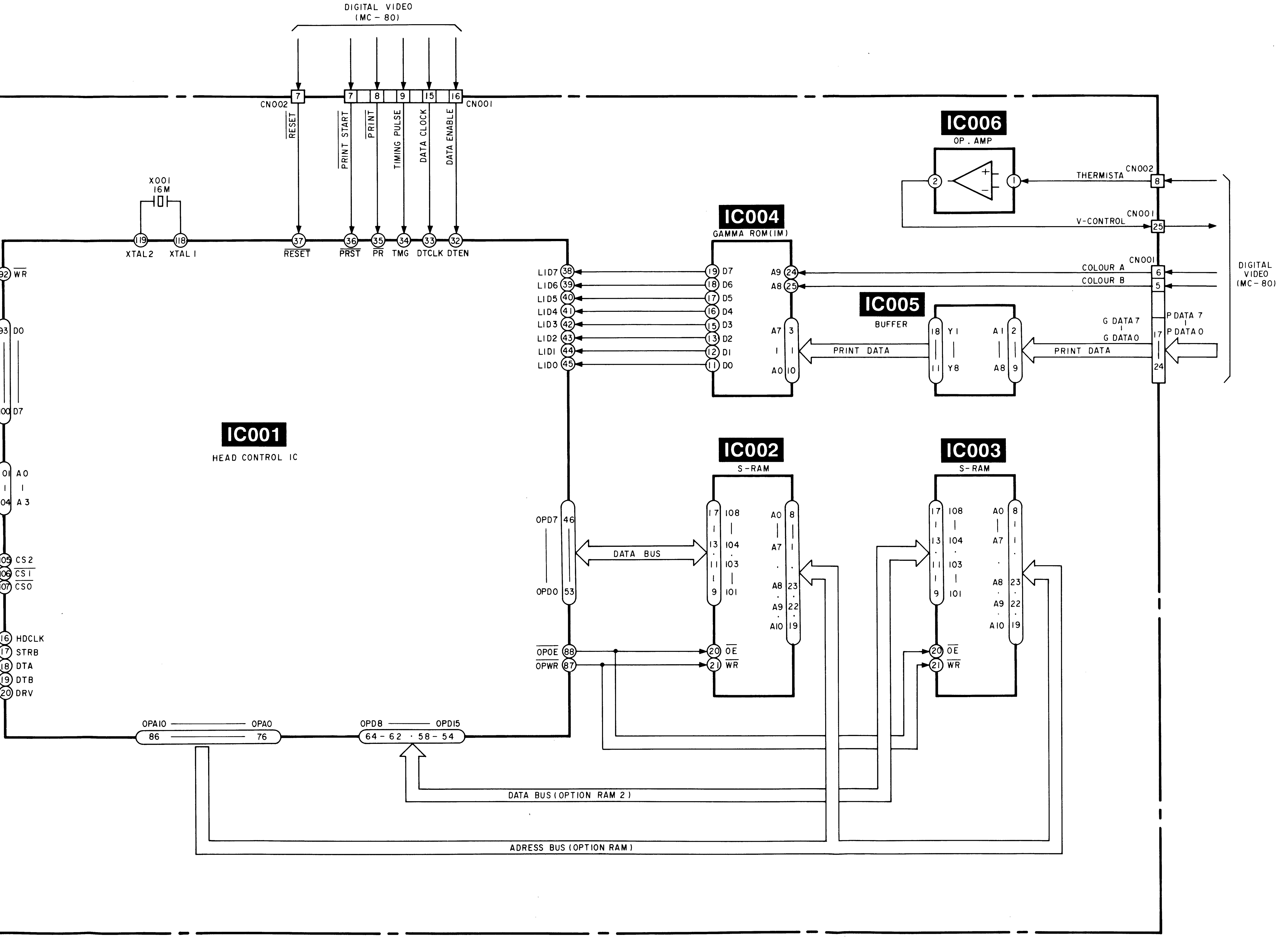
5-4. VIDEO (DIGITAL) BLOCK DIAGRAM


MC-80 BOARD (DIGITAL)
(See Page 99)
IC101 A/D CONVERTOR
IC201 A/D CONVERTOR
IC301 A/D CONVERTOR
IC401 SWITCH
IC402 SWITCH-2
IC403 SWITCH
IC411 DATA SELECTOR
IC515 (1/4)
IC514 (1/6)
IC102 SRAM
IC202 SRAM
IC302 SRAM
IC404 SWITCH
IC407 D/A CONVERTOR
IC405 SWITCH
IC408 SUB MASKING ROM
IC409 MAIN MASKING ROM
IC410 LATCH
IC501, IC502 DRAM
IC503, IC504 DRAM
IC505, IC506 DRAM
IC514 (1/6) INVERTER GAT
IC515 OR GATE
IC507 GATE ARRAY
IC508 GATE ARRAY
IC509 GATE ARRAY
IC510 CPU
IC512 DATA SELECTOR
IC513 GATE ARRAY
IC516 (1/4)
IC516 (2/4)
IC517 (1/4), DL502
IC515 (3/4)
ANALOG VIDEO (VA-69)
VMR
VMG
VMB
VMRB
W001
CC101
CC201
CC301
CC303
CC103
CC501
CC502
4.2Vp-p
4Vp-p
0.75Vp-p
5.1Vp-p
H
DL501
X501 14.31818 MHz
X502
RV401
D501
D/A CLK
A/D CLK
A/D ON
IN/M
Y3
COL A
COL B
WHITE
MO—M7
S11—S17
S21—S27
S0—S6
CUP LOGIC

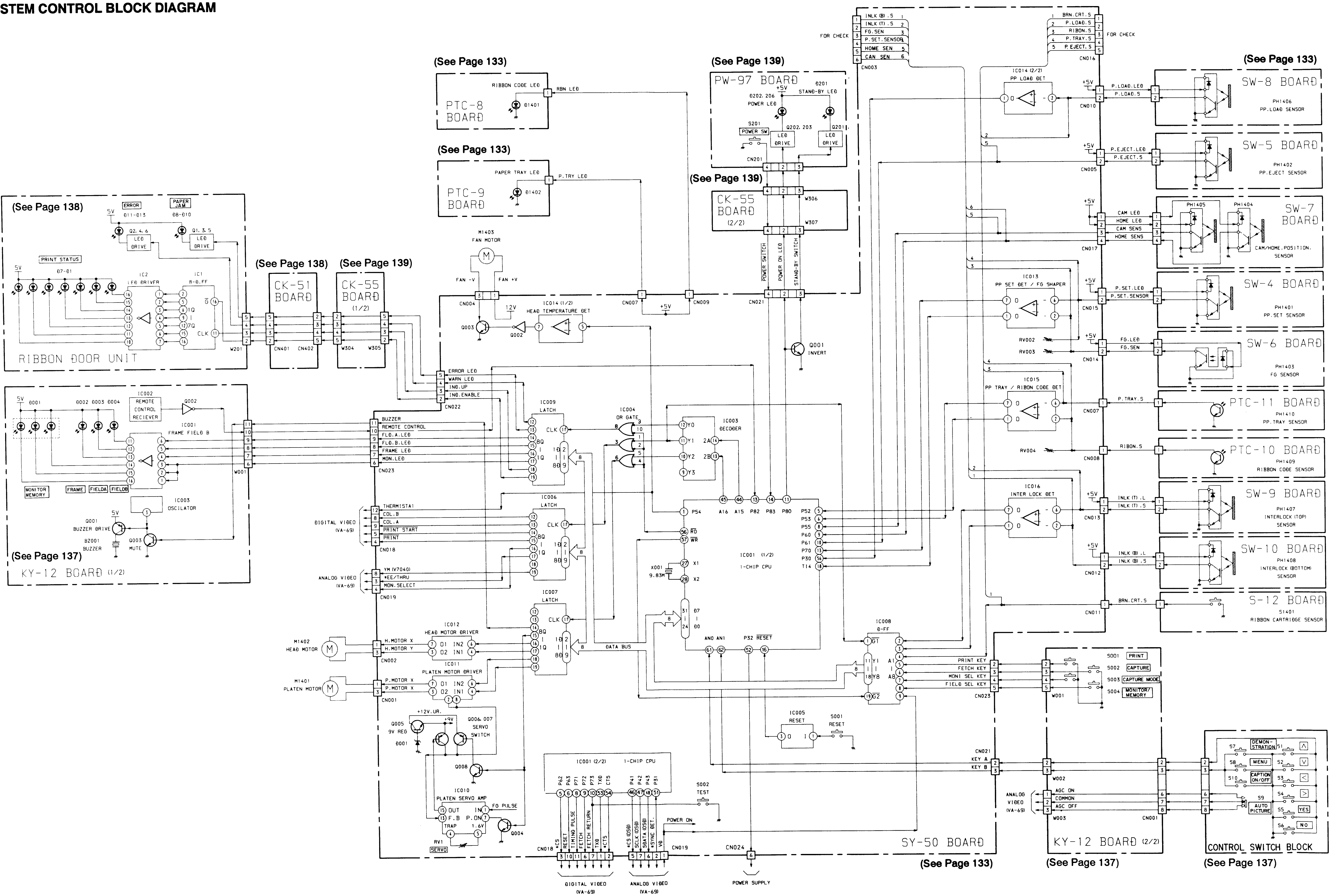

IC102
SRAM
IC202
SRAM
IC302
SRAM
IC404
SWITCH
IC407
D/A CONVERTOR
IC405
SWITCH
IC408
SUB MASKING ROM
IC409
MAIN MASKING ROM
IC410
LATCH
IC406
SWITCH
IC514
IC515
IC514 (1/4)
IC515 (1/4)
IC514 (1/6)
INVERTER GAT
IC515
OR GATE
IC501 IC502
DRAM
IC503 IC504
DRAM
IC505 IC506
DRAM
IC507
GATE ARRAY
IC508
GATE ARRAY
IC509
GATE ARRAY
IC510
CPU
IC512
DATA SELECTOR
IC513
GATE ARRAY
IC516 (1/4)
IC516 (1/4)
IC516 (2/4)
IC517 (1/4)
IC517 (1/4)
IC517 (1/4), DL502
IC515 (3/4)
CUP LOGIC
DL501
X501 14.31818 MHz
X502
D501
RV401
Q101 BUFFER
Q201 BUFFER
Q301 BUFFER
CC103
CC203
CC303
CC501
CC502
0.75Vp-p
5.1Vp-p
H
W002
MVR
MVG
MVB
ANALOG VIDEO (VA-69)
W005
V-CONTROL
POWER SUPPLY
CN001
V-CONTROL
P. DATA 7
P. DATA 0
DATA CLOCK
DATA ENABLE
COLOUR A
COLOUR B
PRINT START
PRINT
TIMING PULSE
HEAD CONTROL (HC-10)
W004
THERMISTA I
COLOUR A
COLOUR B
SYSTEM CONTROL (SY-50)
CN001
HEAD CLOCK
LATCH
DATA 1
DATA 2
STROBE
HEAD CONTROL (HC-10)
CN003
THERMISTA I
HEAD CLOCK
LATCH
DATA 1
DATA 2
STROBE
THERMAL HEAD
W003
VMHD
VMVD
VMI/E
ANALOG VIDEO (VA-69)
W004
TXD
CTS
CE(CS)
PRINT
PRINT START
FETCH
FETCH RETURN
RESET
TIMING PULSE
SYSTEM CONTROL (SY-50)
CN002
RESET
THERMISTA I
WR
AD0
AD3
DATA 0
DATA 7
HCCS0 (CS0)
HCCS1 (CS1)
HCCS2 (CS2)
HEAD CONTROL (HC-10)
MMU CAS
WRP
DAEN
COL A
COL B
FETCHRET
SWDHDL
GOGI
WHITE
Y3
D/A ON

5-5. HEAD CONTROL BLOCK DIAGRAM

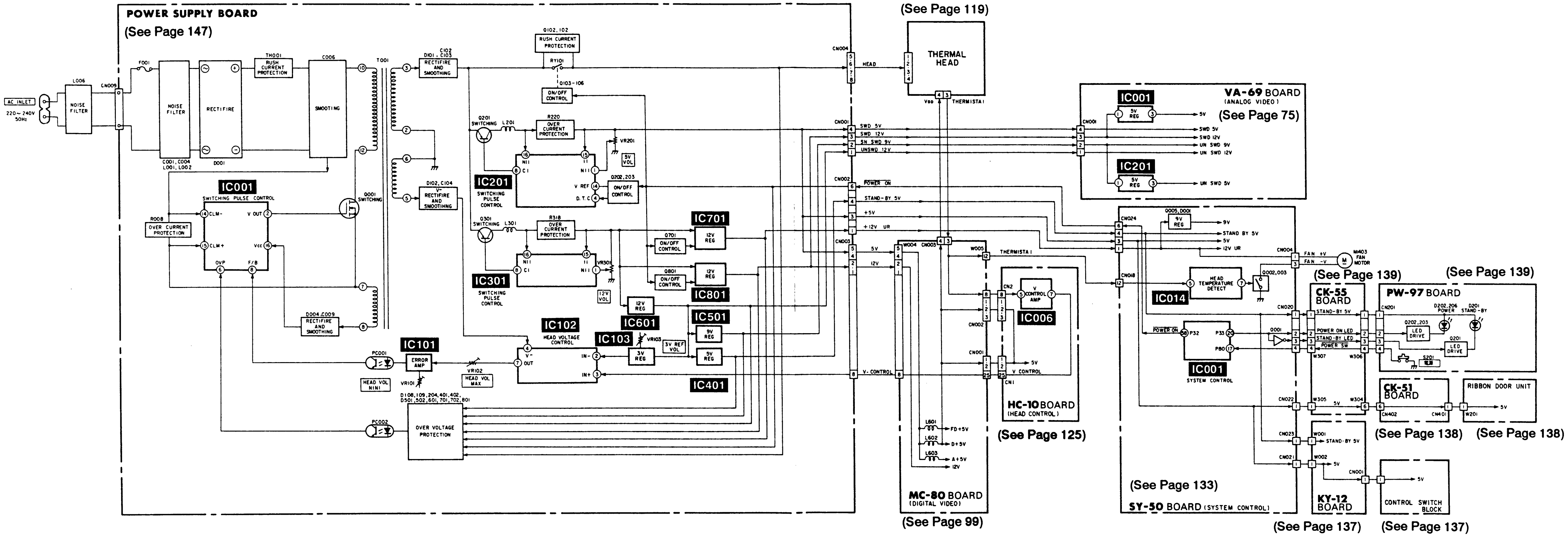

DIGITAL VIDEO (MC-80)
HC-10 BOARD
(See Page 125)
CN002
CN001
RESET
PRINT START
PRINT
TIMING PULSE
DATA CLOCK
DATA ENABLE
X001 16M
XTAL2
XTAL1
PRST
PR
TMG
DTCLK
DTEN
WR
DATA 0
DATA 7
DATA BUS
D0
D7
AD 0
AD 3
ADRESS BUS
A0
A3
CS2
CS1
CS0
DIGITAL VIDEO (MC-80)
HEAD CLOCK
LATCH
DATA 1
DATA 2
STROBE
HDCLK
STRB
DTA
DTB
DRV
IC001
HEAD CONTROL IC
OPA10
OPA0
OPD8
OPD15
64 - 62 · 58 - 54
LID7
LID6
LID5
LID4
LID3
LID2
LID1
LID0
IC004
GAMMA ROM(1M)
IC005
BUFFER
PRINT DATA
IC002
S-RAM
OPD7
OPD0
OE
WR
OPOE
OPWR
DATA BUS(OPTION RAM 2)
ADRESS BUS(OPTION RAM)


DIGITAL VIDEO (MC-80)
CN002
CN001
RESET
PRINT START
PRINT
TIMING PULSE
DATA CLOCK
DATA ENABLE
X001 16M
XTAL2
XTAL1
RESET
PRST
PR
TMG
DTCLK
DTEN
IC001
HEAD CONTROL IC
WR
D0
D7
A0
A3
CS2
CS1
CS0
HDCLK
STRB
DTA
DTB
DRV
LID7
LID6
LID5
LID4
LID3
LID2
LID1
LID0
OPD7
OPD0
OPOE
OPWR
OPA10 — OPA0
86 — 76
OPD8 — OPD15
64 - 62 · 58 - 54
IC004
GAMMA ROM(1M)
D7
D6
D5
D4
D3
D2
D1
D0
A9
A8
A7
A0
IC005
BUFFER
Y1
Y8
A1
A8
PRINT DATA
IC006
OP. AMP
THERMISTA
V-CONTROL
COLOUR A
COLOUR B
G DATA 7
G DATA 0
P DATA 7
P DATA 0
DIGITAL VIDEO (MC-80)
IC002
S-RAM
IC003
S-RAM
I08
I04
I03
I01
A0
A7
A8
A9
A10
OE
WR
DATA BUS
DATA BUS (OPTION RAM 2)
ADRESS BUS (OPTION RAM)

5-6. SYSTEM CONTROL BLOCK DIAGRAM

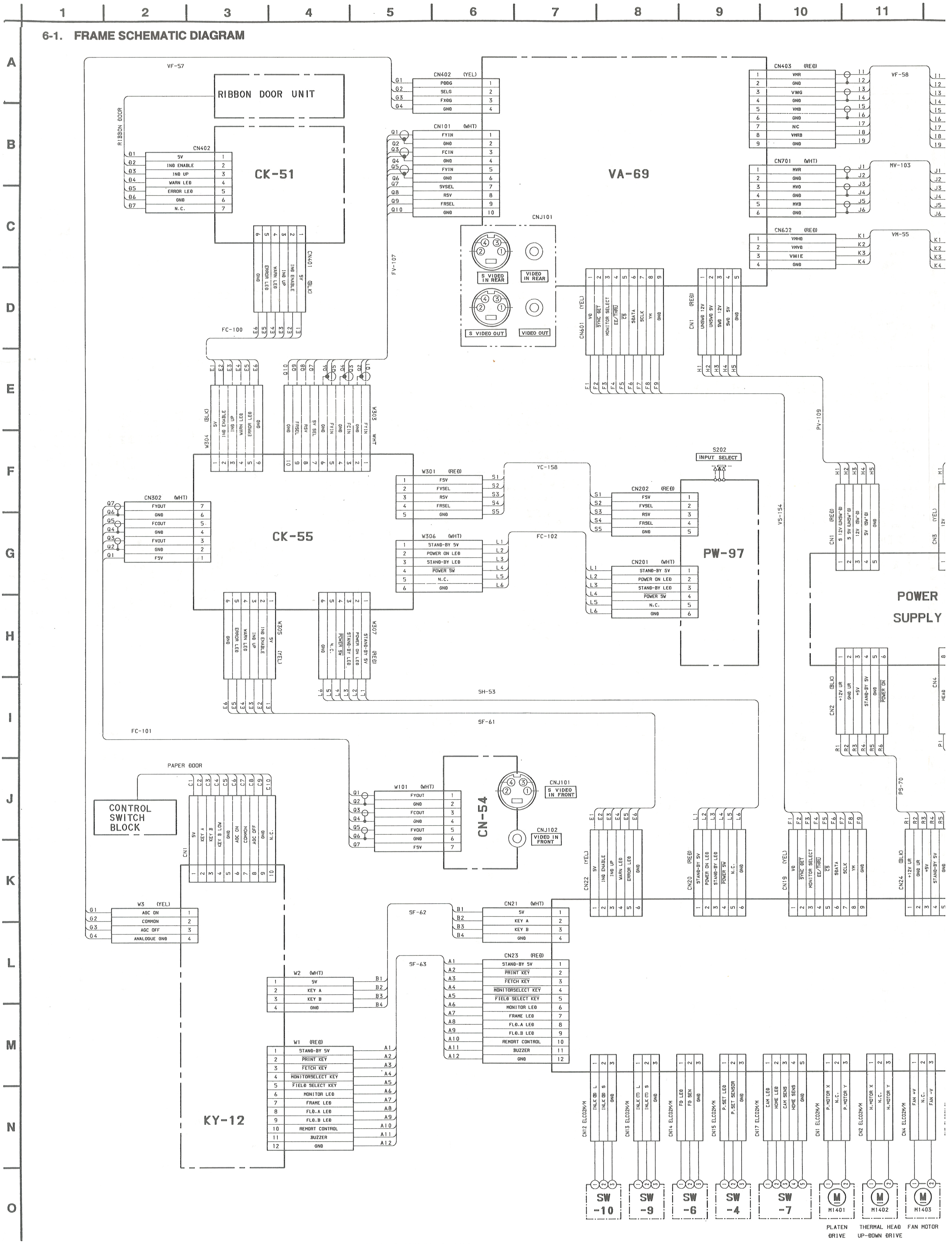

(See Page 138)
RIBBON DOOR UNIT
ERROR
PAPER JAM
PRINT STATUS
IC2 LED DRIVER
IC1 8-D.FF
LED DRIVE
W201
(See Page 138)
CK-51 BOARD
CN401
CN402
(See Page 139)
CK-55 BOARD (1/2)
W304
W305
(See Page 137)
KY-12 BOARD (1/2)
IC002 REMOTE CONTROL RECIEVER
IC001 FRAME FIELD B
MONITOR MEMORY
FRAME
FIELDA
FIELDB
IC003 OSCILATOR
Q001 BUZZER DRIVE
BZ001 BUZZER
Q003 MUTE
W001
(See Page 133)
PTC-8 BOARD
RIBBON CODE LED
RBN LED
(See Page 133)
PTC-9 BOARD
PAPER TRAY LED
P.TRY LED
M1403 FAN MOTOR
FAN -V
FAN +V
CN004
IC014 (1/2) HEAD TEMPERATURE DET
Q003
Q002
CN007
CN009
+5V
(See Page 139)
PW-97 BOARD
D201 STAND-BY LED
D202, 206 POWER LED
S201 POWER SW
LED DRIVE
CN201
(See Page 139)
CK-55 BOARD (2/2)
W306
W307
POWER SWITCH
POWER ON LED
STAND-BY SWITCH
CN021
Q001 INVERT
ERROR LED
WARN LED
ING.UP
ING.ENABLE
CN022
BUZZER
REMOTE CONTROL
FLD.A.LED
FLD.B.LED
FRAME LED
MON.LED
CN023
IC009 LATCH
IC004 OR GATE
IC003 DECODER
DIGITAL VIDEO (VA-69)
COL.B
COL.A
PRINT START
PRINT
CN018
IC006 LATCH
ANALOG VIDEO (VA-69)
YM (V7040)
*EE/THRU
MON.SELECT
CN019
IC007 LATCH
IC001 (1/2) 1-CHIP CPU
X001 9.83M
DATA BUS
M1402 HEAD MOTOR
IC012 HEAD MOTOR DRIVER
H.MOTOR X
H.MOTOR Y
CN002
M1401 PLATEN MOTOR
IC011 PLATEN MOTOR DRIVER
P.MOTOR X
CN001
+12V.UR.
Q005 9V REG
Q006, 007 SERVO SWITCH
Q008
IC010 PLATEN SERVO AMP
FG PULSE
Q004
RV1 SERVO
IC001 (2/2) 1-CHIP CPU
S002 TEST
POWER ON
CN018
CN019
CN024
DIGITAL VIDEO (VA-69)
ANALOG VIDEO (VA-69)
POWER SUPPLY
IC008 8-FF
IC005 RESET
S001 RESET
SY-50 BOARD
(See Page 133)
CN003
FOR CHECK
INLK (B).S
INLK (T).S
FG.SEN
P.SET.SENSOR
HOME SEN
CAM SEN
BRN.CRT.S
P.LOAD.S
RIBON.S
P.TRAY.S
P.EJECT.S
CN016
IC014 (2/2) PP LOAD DET
(See Page 133)
SW-8 BOARD
PH1406 PP.LOAD SENSOR
P.LOAD.LED
CN010
SW-5 BOARD
PH1402 PP.EJECT SENSOR
P.EJECT.LED
CN005
SW-7 BOARD
PH1405
PH1404
CAM/HOME.POSITION. SENSOR
CAM LED
HOME LED
CAM SENS
HOME SENS
CN017
IC013 PP SET DET / FG SHAPER
SW-4 BOARD
PH1401 PP.SET SENSOR
P.SET.LED
P.SET.SENSOR
CN015
RV002
RV003
SW-6 BOARD
PH1403 FG SENSOR
FG.LED
FG.SEN
CN014
IC015 PP TRAY / RIBON CODE DET
PTC-11 BOARD
PH1410 PP.TRAY SENSOR
CN007
RV004
PTC-10 BOARD
PH1409 RIBBON CODE SENSOR
RIBON.S
CN008
IC016 INTER LOCK DET
SW-9 BOARD
PH1407 INTERLOCK (TOP) SENSOR
INLK (T).L
CN013
SW-10 BOARD
PH1408 INTERLOCK (BOTTOM) SENSOR
INLK (B).L
CN012
S-12 BOARD
S1401 RIBBON CARTRIDGE SENSOR
CN011
PRINT KEY
FETCH KEY
MONI SEL KEY
FIELD SEL KEY
CN023
S001 PRINT
S002 CAPTURE
S003 CAPTURE MODE
S004 MONITOR/MEMORY
W001
CN021
KEY A
KEY B
W002
ANALOG VIDEO (VA-69)
AGC ON
COMMON
AGC OFF
W003
CN001
KY-12 BOARD (2/2)
(See Page 137)
S7 DEMON-STRATION
S8 MENU
S10 CAPTION ON/OFF
S9 AUTO PICTURE
S1
S2
S3
S4
S5 YES
S6 NO
CONTROL SWITCH BLOCK
(See Page 137)

5-7. POWER BLOCK DIAGRAM

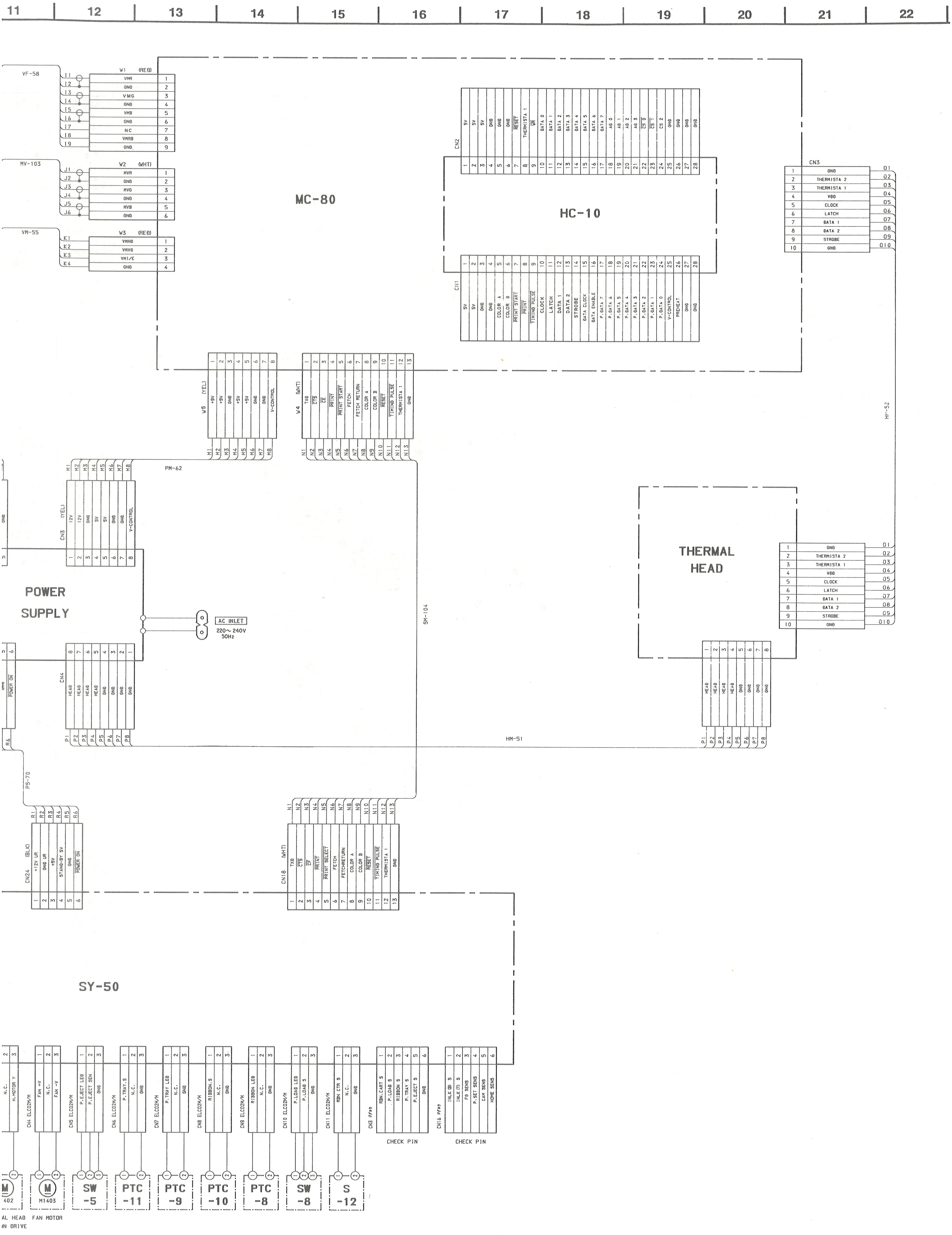

POWER SUPPLY BOARD
(See Page 147)
AC INLET
220~240V 50Hz
L006
NOISE FILTER
CN009
F001
NOISE FILTER
C001, C004 L001, L002
RECTIFIRE
D001
TH001
RUSH CURRENT PROTECTION
C006
SMOOTING
T001
D101, C103 C102
RECTIFIRE AND SMOOTHING
D102, C104
V-
RECTIFIRE AND SMOOTHIHNG
IC001
SWITCHING PULSE CONTROL
CLM-
CLM+
V OUT
Vcc
OVP
F/B
R008
OVER CURRENT PROTECTION
Q001
SWITCHING
D004, C009
RECTIFIRE AND SMOOTHING
IC101
ERROR AMP
PC001
PC002
HEAD VOL NINI
VR101
VR102
HEAD VOL MAX
D108, 109, 204, 401, 402, D501, 502, 601, 701, 702, 801
OVER VOLTAGE PROTECTION
Q102, 102
RUSH CURRENT PROTECTION
RY101
Q103-106
ON/OFF CONTROL
Q201
SWITCHING
L201
R220
OVER CURRENT PROTECTION
VR201
5V VOL
IC201
SWITCHING PULSE CONTROL
NII
CI
V REF
D.T.C
Q202, 203
ON/OFF CONTROL
Q301
SWITCHING
L301
R318
OVER CURRENT PROTECTION
VR301
12V VOL
IC301
SWITCHING PULSE CONTROL
IC701
Q701
ON/OFF CONTROL
12V REG
Q801
ON/OFF CONTROL
12V REG
IC801
12V REG
IC601
IC501
9V REG
5V REG
IC401
IC102
HEAD VOLTAGE CONTROL
V-
OUT
IN-
IN+
IC103
VR103
3V REG
3V REF VOL
CN004
HEAD
CN001
SWD 5V
SWD 12V
SN SWD 9V
UNSWD 12V
CN002
POWER ON
STAND-BY 5V
+5V
+12V UR
CN003
5V
12V
V-CONTROL
(See Page 119)
THERMAL HEAD
VDD
THERMISTA I
W004
CN003
W005
THERMISTA I
L601
FD+5V
L602
D+5V
L603
A+5V
12V
CN002
CN001
MC-80 BOARD
(DIGITAL VIDEO)
(See Page 99)
CN2
V CONTROL AMP
IC006
5V
V CONTROL
CN1
HC-10 BOARD
(HEAD CONTROL)
(See Page 125)
VA-69 BOARD
(ANALOG VIDEO)
(See Page 75)
IC001
5V REG
5V
CN001
SWD 5V
SWD 12V
UN SWD 9V
UN SWD 12V
IC201
5V REG
UN SWD 5V
CN024
Q005, D001
9V REG
9V
STAND BY 5V
5V
12V UR
CN004
FAN +V
FAN -V
M1403
FAN MOTOR
CN018
HEAD TEMPERATURE DETECT
IC014
Q002, 003
CN020
POWER ON
P32
P33
P80
Q001
IC001
SYSTEM CONTROL
CN022
CN023
CN021
(See Page 133)
SY-50 BOARD (SYSTEM CONTROL)
(See Page 139)
CK-55 BOARD
STAND-BY 5V
POWER ON LED
STAND-BY LED
POWER SW
W307
W306
W305
5V
W304
(See Page 139)
PW-97 BOARD
CN201
D202, 206
POWER
D201
STAND-BY
Q202, 203
LED DRIVE
Q201
LED DRIVE
S201
電源
CK-51 BOARD
CN402
CN401
RIBBON DOOR UNIT
W201
5V
(See Page 138)
(See Page 138)
W001
STAND-BY 5V
W002
5V
CN001
KY-12 BOARD
5V
CONTROL SWITCH BLOCK
(See Page 137)
(See Page 137)

SECTION 6
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

6-1. FRAME SCHEMATIC DIAGRAM

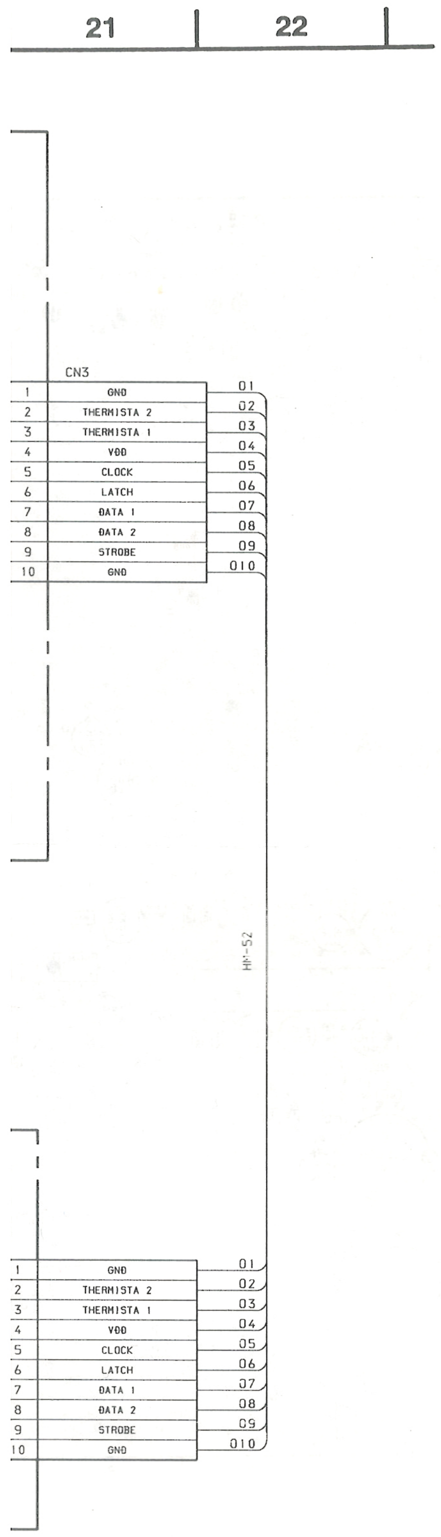

1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
VF-57
RIBBON DOOR UNIT
RIBBON DOOR
CN402
5V
IND ENABLE
IND UP
WARN LED
ERROR LED
GND
N.C.
CK-51
CN401 (BLK)
FC-100
CN402 (YEL)
PDDG
SELG
FXDG
GND
CN101 (WHT)
FYIN
FCIN
FVIN
SVSEL
RSV
FRSEL
FV-107
VA-69
CNJ101
S VIDEO IN REAR
VIDEO IN REAR
S VIDEO OUT
VIDEO OUT
CN601 (YEL)
V0
SYNC DET
MONITOR SELECT
EE/THRU
CS
SDATA
SCLK
YM
CN1 (RED)
UNSWD 12V
UNSWD 5V
SWD 12V
SWD 5V
CN403 (RED)
VMR
VMG
VMB
NC
VMRB
VF-58
CN701 (WHT)
MVR
MVG
MVB
MV-103
CN632 (RED)
VMHD
VMVD
VMIE
VM-55
PV-109
W304 (BLK)
W303 WHT
CK-55
CN302 (WHT)
FYOUT
FCOUT
FVOUT
F5V
W301 (RED)
F5V
FVSEL
RSV
FRSEL
YC-158
W306 (WHT)
STAND-BY 5V
POWER ON LED
STAND-BY LED
POWER SW
FC-102
CN202 (RED)
CN201 (WHT)
S202
INPUT SELECT
PW-97
VS-154
W305 (YEL)
W307 (RED)
SH-53
SF-61
FC-101
POWER SUPPLY
CN1 (RED)
S 12V (UNSW*D)
S 5V (UNSW*D)
12V (SW*D)
5V (SW*D)
CN3 (YEL)
CN2 (BLK)
+12V UR
GND UR
+5V
POWER ON
CN4
PS-70
PAPER DOOR
CONTROL SWITCH BLOCK
CN1
KEY A
KEY B LOW
ADC ON
COMMON
ADC OFF
W101 (WHT)
CN-54
CNJ101
S VIDEO IN FRONT
CNJ102
VIDEO IN FRONT
CN22 (YEL)
CN20 (RED)
CN19 (YEL)
CN24 (BLK)
W3 (YEL)
AGC ON
COMMON
AGC OFF
ANALOGUE GND
SF-62
CN21 (WHT)
5V
KEY A
KEY B
SF-63
CN23 (RED)
PRINT KEY
FETCH KEY
MONITORSELECT KEY
FIELD SELECT KEY
MONITOR LED
FRAME LED
FLD.A LED
FLD.B LED
REMORT CONTROL
BUZZER
W2 (WHT)
W1 (RED)
KY-12
CN12 ELC02M/M
INLK (B) L
INLK (B) S
CN13 ELC02M/M
INLK (T) L
INLK (T) S
CN14 ELC02M/M
FD LED
FD SEN
CN15 ELC02M/M
P.SET LED
P.SET SENSOR
CN17 ELC02M/M
CAM LED
HOME LED
CAM SENS
HOME SENS
CN1 ELC02M/M
P.MOTOR X
P.MOTOR Y
CN2 ELC02M/M
H.MOTOR X
H.MOTOR Y
CN4 ELC02M/M
FAN +V
FAN -V
SW -10
SW -9
SW -6
SW -4
SW -7
M
M1401
M1402
M1403
PLATEN DRIVE
THERMAL HEAD UP-DOWN DRIVE
FAN MOTOR

FRAME FRAME



11
12
13
14
15
16
17
18
19
20
21
22
VF-58
W1 (RED)
VMR
GND
VMG
VMB
NC
VMRB
MV-103
W2 (WHT)
MVR
MVG
MVB
VM-55
W3 (RED)
VMHD
VMVD
VMI/E
MC-80
HC-10
CN2
5V
RESET
THERMISTA 1
WR
DATA 0
DATA 1
DATA 2
DATA 3
DATA 4
DATA 5
DATA 6
DATA 7
A0 0
A0 1
A0 2
A0 3
CS 0
CS 1
CS 2
CN1
COLOR A
COLOR B
PRINT START
PRINT
TIMING PULSE
CLOCK
LATCH
DATA 1
DATA 2
STROBE
DATA CLOCK
DATA ENABLE
P.DATA 7
P.DATA 6
P.DATA 5
P.DATA 4
P.DATA 3
P.DATA 2
P.DATA 1
P.DATA 0
V-CONTROL
PREHEAT
CN3
GND
THERMISTA 2
THERMISTA 1
VDD
CLOCK
LATCH
DATA 1
DATA 2
STROBE
HM-52
W5 (YEL)
+5V
V-CONTROL
W4 (WHT)
TXD
CTS
CE
PRINT
PRINT START
FETCH
FETCH RETURN
COLOR A
COLOR B
RESET
TIMING PULSE
THERMISTA 1
PM-62
CN3 (YEL)
12V
5V
POWER SUPPLY
AC INLET
220～240V
50Hz
CN4
HEAD
POWER ON
HM-51
SM-104
THERMAL HEAD
PS-70
CN24 (BLK)
+12V UR
GND UR
+5V
STAND-BY 5V
POWER ON
CN18 (WHT)
CF
PRINT SELECT
FETCHRETURN
SY-50
N.C.
H.MOTOR Y
CN4 ELC02K/M
FAN +V
FAN -V
CN5 ELC02K/M
P.EJECT LED
P.EJECT SEN
CN6 ELC02K/M
P.TRAY.S
CN7 ELC02K/M
P.TRAY LED
CN8 ELC02K/M
RIBBON.S
CN9 ELC02K/M
RIBBON LED
CN10 ELC02K/M
P.LOAD LED
P.LOAD S
CN11 ELC02K/M
RBN.CTR S
CN3
RBN.CART S
P.LOAD S
RIBBON S
P.TRAY S
P.EJECT S
CHECK PIN
CN16
INLK (B) S
INLK (T) S
FO SENS
P.SET SENS
CAM SENS
HOME SENS
M 402
M M1403
SW -5
PTC -11
PTC -9
PTC -10
PTC -8
SW -8
S -12
AL HEAD
FAN MOTOR
N DRIVE

FRAME FRAME



6-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this , the necessary note is printed in each block.)

- **For printed wiring boards.**

- ● : Through hole.
- ▩ : Pattern from the side which enables seeing.
  (The other layer's patterns are not indicated)

* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/8W unless otherwise noted.
  Chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repeair.*
- —— : B+ Line.*
- - - - : B– Line.*
- ⇨ : IN/OUT direction of (+, –) B LINE.*
- Circled numbers refer to waveforms.*
- Voltages are dc between ground and measurement points.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltages are taken with a VOM (Input impedance 10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

Note:
The components identi- fied by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

* indicated by the color red.

〈 DIODE 〉

D101	8-719-108-12	DIODE	RD9. 1E-W
D102	8-719-108-12	DIODE	RD9. 1E-W
D103	8-719-108-12	DIODE	RD9. 1E-W
D105	8-719-104-34	DIODE	1S2836
D106	8-719-108-12	DIODE	RD9. 1E-W
D107	8-719-108-12	DIODE	RD9. 1E-W
D108	8-719-108-12	DIODE	RD9. 1E-W
D401	8-719-400-18	DIODE	MA152WK
D402	8-719-800-76	DIODE	1SS226
D501	8-719-400-18	DIODE	MA152WK
D502	8-719-400-18	DIODE	MA152WK
D503	8-719-800-76	DIODE	1SS226
D504	8-719-800-76	DIODE	1SS226
D601	8-719-800-09	DIODE	1SV101
D602	8-713-300-57	DIODE	1T33
D603	8-719-400-18	DIODE	MA152WK
D701	8-719-104-34	DIODE	1S2836
D702	8-719-104-34	DIODE	1S2836

〈 IC 〉

IC001	8-759-604-35	IC	M5F78M05
IC101	8-759-710-07	IC	NJM2234M
IC102	8-759-710-07	IC	NJM2234M
IC103	8-759-710-07	IC	NJM2234M
IC104	8-759-710-86	IC	NJM2233BM
IC105	8-759-710-86	IC	NJM2233BM
IC106	8-759-057-40	IC	MC14577BF
IC107	8-759-057-40	IC	MC14577BF
IC108	8-759-710-86	IC	NJM2233BM
IC109	8-759-057-40	IC	MC14577BF
IC201	8-759-982-05	IC	RC7805FA
IC202	8-759-057-40	IC	MC14577BF
IC203	8-752-334-55	IC	CXD1175AM
IC204	8-752-342-61	IC	CXD2105AQ
IC205	8-759-242-74	IC	TC7W04F
IC401	8-759-057-43	IC	MC14576BF
IC403	8-752-036-21	IC	CXA1213S
IC404	8-759-242-64	IC	TC4W53F
IC405	8-759-908-17	IC	TL082CPS
IC501	8-752-030-31	IC	CXA1024S
IC502	8-759-908-17	IC	TL082CPS
IC601	8-752-332-67	IC	CXD1217M
IC603	8-759-242-76	IC	TC7W08F
IC604	8-759-242-64	IC	TC4W53F
IC605	8-759-987-20	IC	CXD1229Q
IC606	8-759-242-74	IC	TC7W04F
IC607	8-759-101-12	IC	uPC311G2
IC608	8-759-925-90	IC	SN74HC74ANS
IC609	8-759-242-74	IC	TC7W04F
IC610	8-752-332-67	IC	CXD1217M
IC611	8-759-008-45	IC	MC74HC4538F
IC612	8-759-927-46	IC	SN74HC00ANS
IC613	8-759-008-45	IC	MC74HC4538F
IC614	8-759-926-29	IC	SN74HC175ANS
IC615	8-759-927-46	IC	SN74HC00ANS
IC616	8-759-925-90	IC	SN74HC74ANS
IC617	8-759-925-72	IC	SN74HC02ANS
IC618	8-759-076-26	IC	M50555-190SP
IC619	8-759-926-18	IC	SN74HC157ANS
IC650	8-759-710-61	IC	NJM2229M
IC660	8-759-242-74	IC	TC7W04F
IC701	8-759-710-86	IC	NJM2233BM
IC702	8-759-710-86	IC	NJM2233BM
IC703	8-759-710-86	IC	NJM2233BM
IC704	8-759-300-71	IC	TC4053BF
IC704	8-759-103-25	IC	uPD4053BG
IC705	8-752-033-58	IC	V7040
IC801	8-759-603-56	IC	M51272FP
IC802	8-759-925-90	IC	SN74HC74ANS
IC803	8-759-239-23	IC	TC74HC86AF

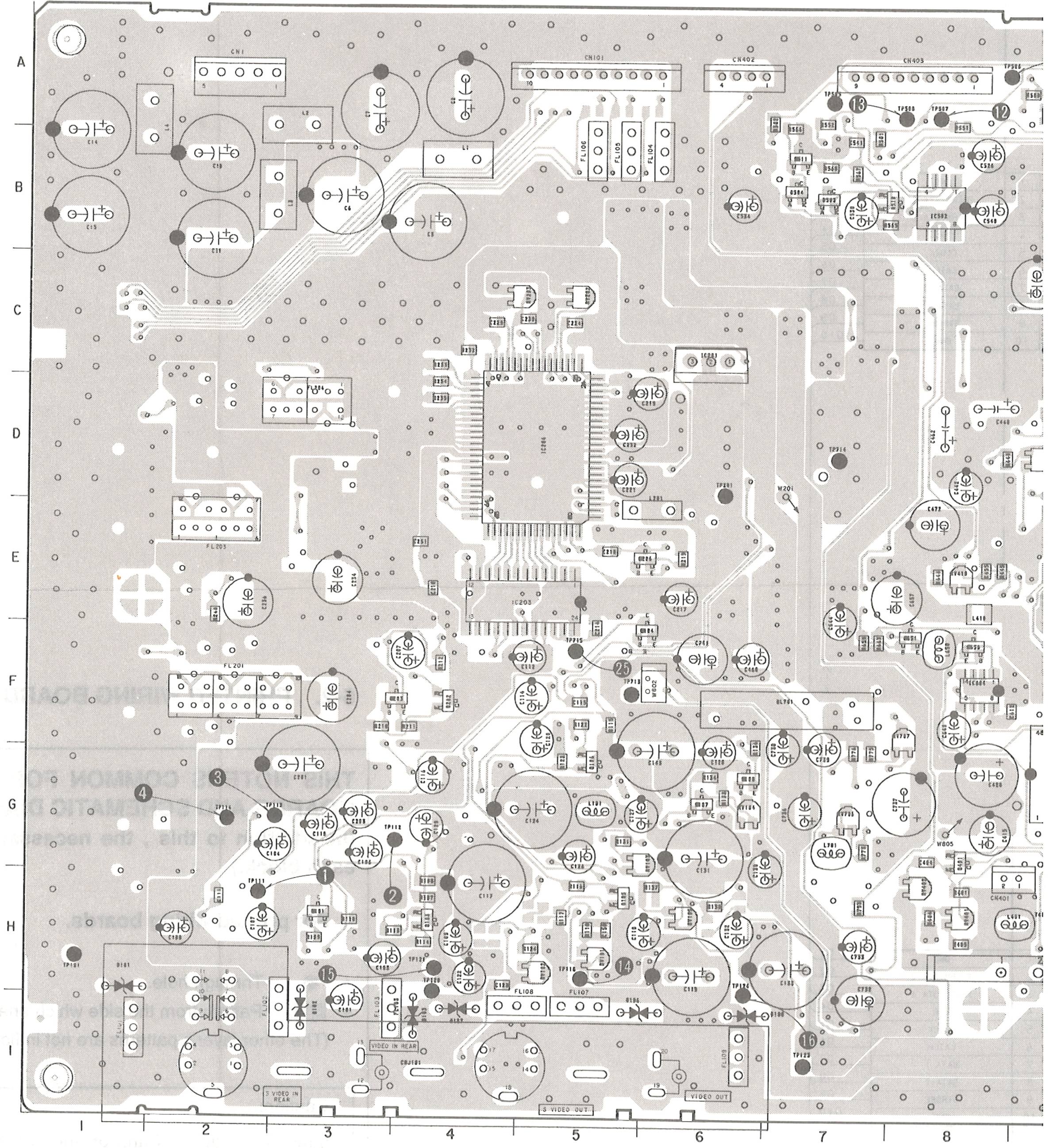
〈 TRANSISTOR 〉

Q101	8-729-100-66	TRANSISTOR	2SC1623-L6
Q102	8-729-100-66	TRANSISTOR	2SC1623-L6
Q103	8-729-100-66	TRANSISTOR	2SC1623-L6
Q104	8-729-901-01	TRANSISTOR	DTC144EK
Q105	8-729-100-66	TRANSISTOR	2SC1623-L6
Q106	8-729-100-66	TRANSISTOR	2SC1623-L6
Q107	8-729-100-66	TRANSISTOR	2SC1623-L6
Q108	8-729-100-66	TRANSISTOR	2SC1623-L6
Q109	8-729-901-01	TRANSISTOR	DTC144EK
Q201	8-729-100-66	TRANSISTOR	2SC1623-L6
Q202	8-729-216-22	TRANSISTOR	2SA1162-L6
Q203	8-729-100-66	TRANSISTOR	2SC1623-L6
Q204	8-729-100-66	TRANSISTOR	2SC1623-L6
Q205	8-729-100-66	TRANSISTOR	2SC1623-L6
Q206	8-729-216-22	TRANSISTOR	2SA1162-G
Q207	8-729-100-66	TRANSISTOR	2SC1623
Q208	8-729-100-66	TRANSISTOR	2SC1623-L6
Q209	8-729-216-22	TRANSISTOR	2SA1162-G
Q210	8-729-100-66	TRANSISTOR	2SC1623-L6
Q211	8-729-100-66	TRANSISTOR	2SC1623-L6
Q212	8-729-100-66	TRANSISTOR	2SC1623-L6
Q401	8-729-100-66	TRANSISTOR	2SC1623-L6
Q402	8-729-100-66	TRANSISTOR	2SC1623-L6
Q403	8-729-100-66	TRANSISTOR	2SC1623-L6
Q404	8-729-100-66	TRANSISTOR	2SC1623-L6
Q405	8-729-100-66	TRANSISTOR	2SC1623-L6
Q406	8-729-901-01	TRANSISTOR	DTC144EK
Q501	8-729-100-66	TRANSISTOR	2SC1623-L6
Q502	8-729-100-66	TRANSISTOR	2SC1623-L6
Q503	8-729-100-66	TRANSISTOR	2SC1623-L6
Q504	8-729-216-22	TRANSISTOR	2SA1162-G
Q505	8-729-100-66	TRANSISTOR	2SC1623-L6
Q506	8-729-216-22	TRANSISTOR	2SA1162-G
Q507	8-729-100-66	TRANSISTOR	2SC1623-L6
Q508	8-729-216-22	TRANSISTOR	2SA1162-G
Q509	8-729-100-66	TRANSISTOR	2SC1623-L6
Q510	8-729-100-66	TRANSISTOR	2SC1623-L6
Q511	8-729-216-22	TRANSISTOR	2SA1162-G
Q513	8-729-100-66	TRANSISTOR	2SC1623-L6
Q601	8-729-100-66	TRANSISTOR	2SC1623-L6
Q602	8-729-901-01	TRANSISTOR	DTC144EK
Q650	8-729-100-66	TRANSISTOR	2SC1623-L6
Q651	8-729-100-66	TRANSISTOR	2SC1623-L6
Q652	8-729-901-01	TRANSISTOR	DTC144EK
Q701	8-729-100-66	TRANSISTOR	2SC1623-L6
Q702	8-729-100-66	TRANSISTOR	2SC1623-L6
Q703	8-729-100-66	TRANSISTOR	2SC1623-L6
Q704	8-729-100-66	TRANSISTOR	2SC1623-L6
Q705	8-729-100-66	TRANSISTOR	2SC1623-L6
Q710	8-729-100-66	TRANSISTOR	2SC1623-L6
Q715	8-729-100-66	TRANSISTOR	2SC1623-L6
Q716	8-729-901-01	TRANSISTOR	DTC144EK
Q717	8-729-902-96	TRANSISTOR	FMS1
Q718	8-729-902-96	TRANSISTOR	FMS1
Q719	8-729-902-96	TRANSISTOR	FMS1
Q720	8-729-216-22	TRANSISTOR	2SA1162-G
Q727	8-729-100-66	TRANSISTOR	2SC1623-L6
Q728	8-729-216-22	TRANSISTOR	2SA1162-G
Q729	8-729-100-66	TRANSISTOR	2SC1623-L6
Q730	8-729-100-66	TRANSISTOR	2SC1623-L6
Q731	8-729-100-66	TRANSISTOR	2SC1623-L6
Q801	8-729-100-66	TRANSISTOR	2SC1623-L6
Q802	8-729-100-66	TRANSISTOR	2SC1623-L6
Q803	8-729-100-66	TRANSISTOR	2SC1623-L6
Q804	8-729-100-66	TRANSISTOR	2SC1623-L6
Q805	8-729-100-66	TRANSISTOR	2SC1623-L6
Q806	8-729-100-66	TRANSISTOR	2SC1623-L6
Q807	8-729-216-22	TRANSISTOR	2SA1162-L6
Q808	8-729-216-22	TRANSISTOR	2SA1162-L6

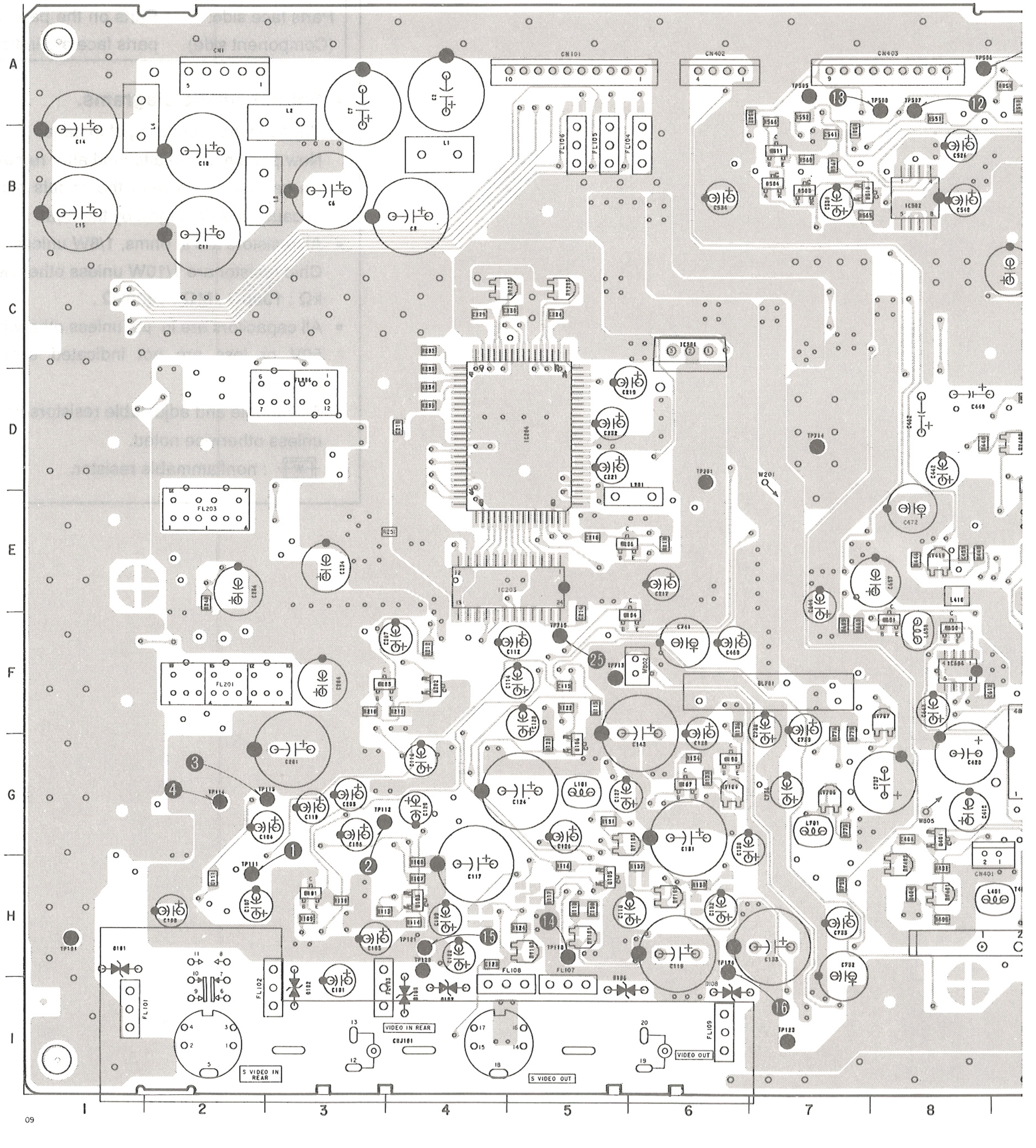
VA-69 (VIDEO (ANALOG)) PRINTED WIRING BOARD

— Ref. No. VA-69 BOARD: 1000 series —

VA-69 BOARD (COMPONENT SIDE) (AEP/UK/AUS model)



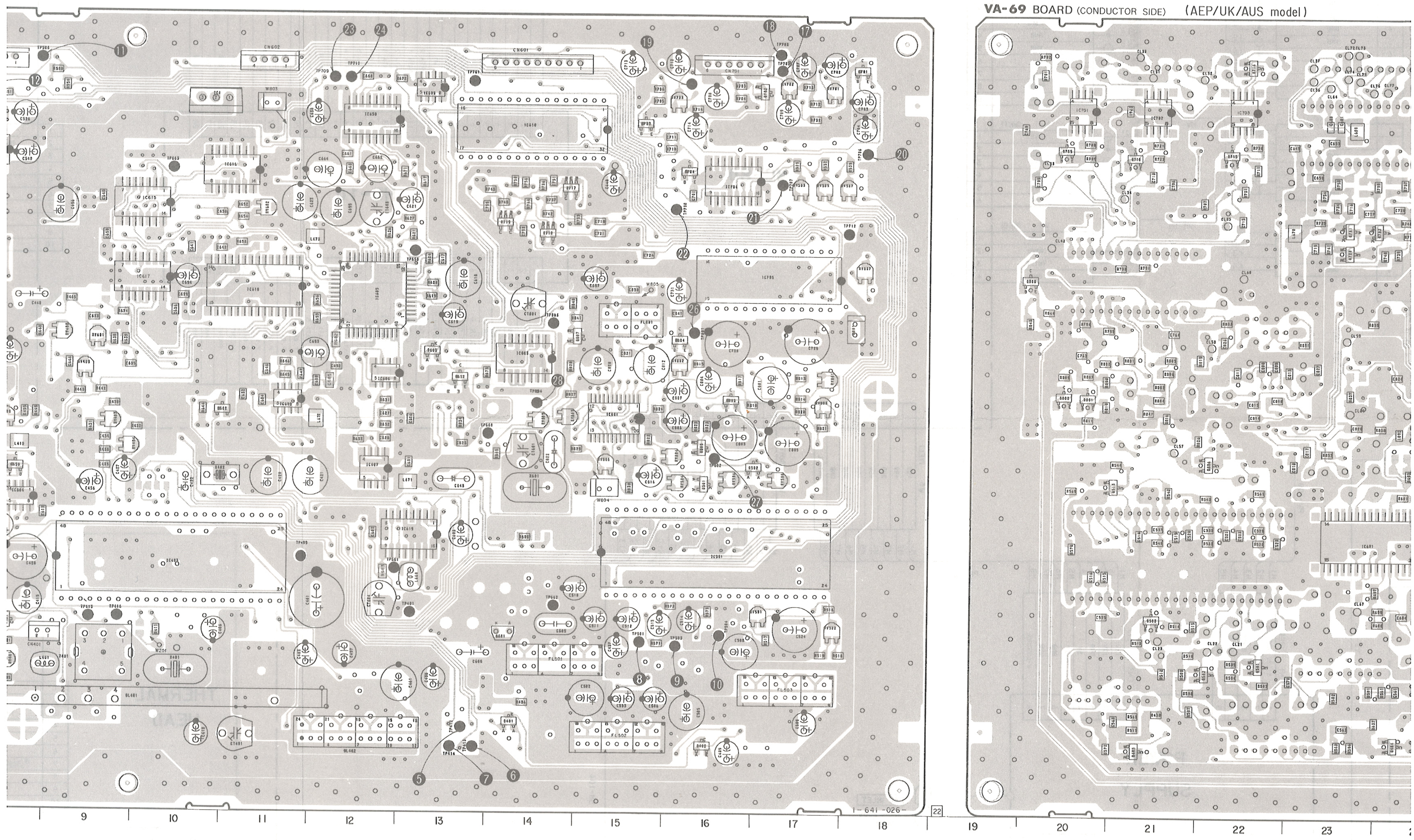
VA-69 BOARD (COMPONENT SIDE) (E model)



Note:

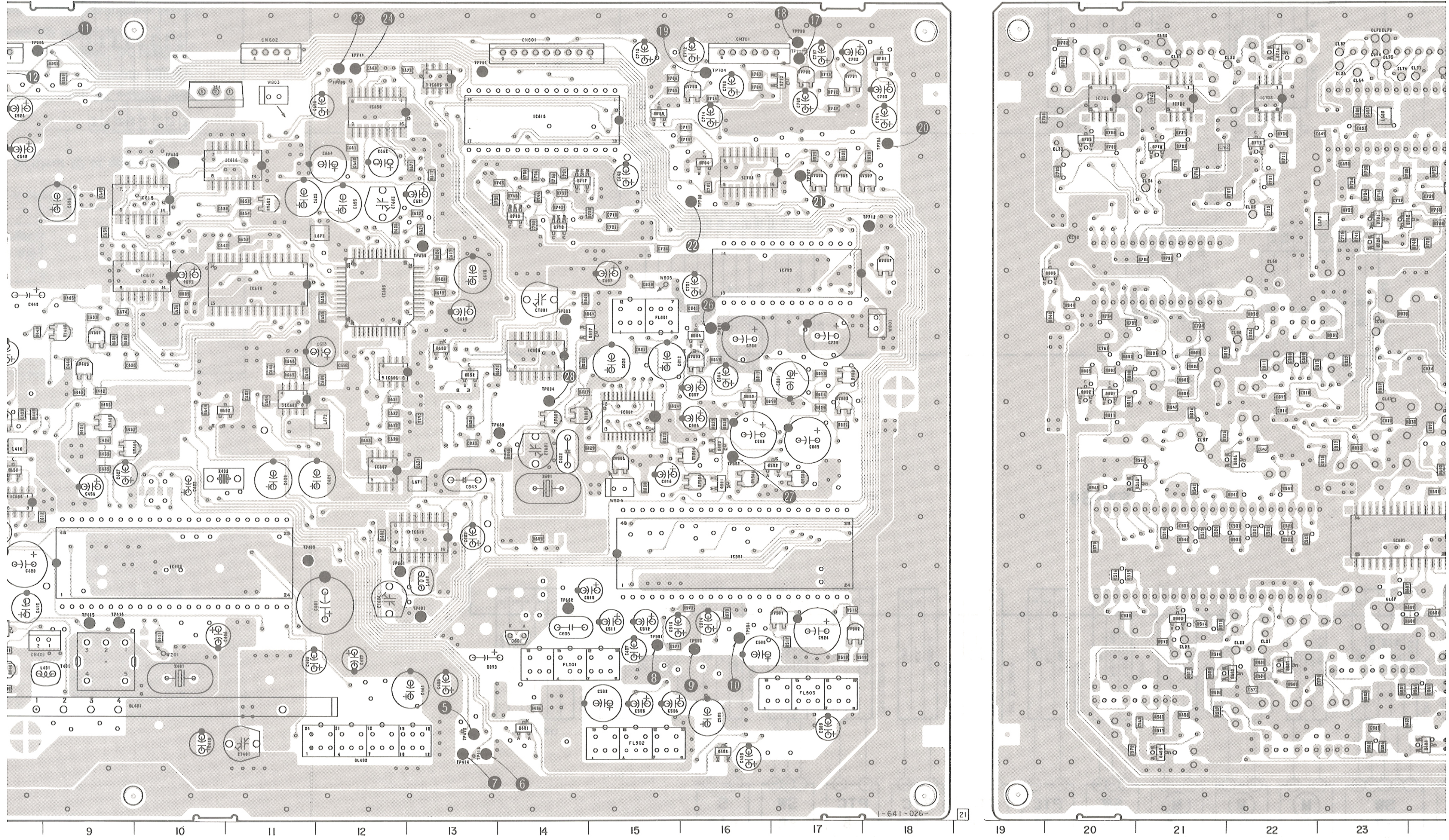
- ○: Through hole

VA-69 BOARD (CONDUCTOR SIDE) (AEP/UK/AUS model)



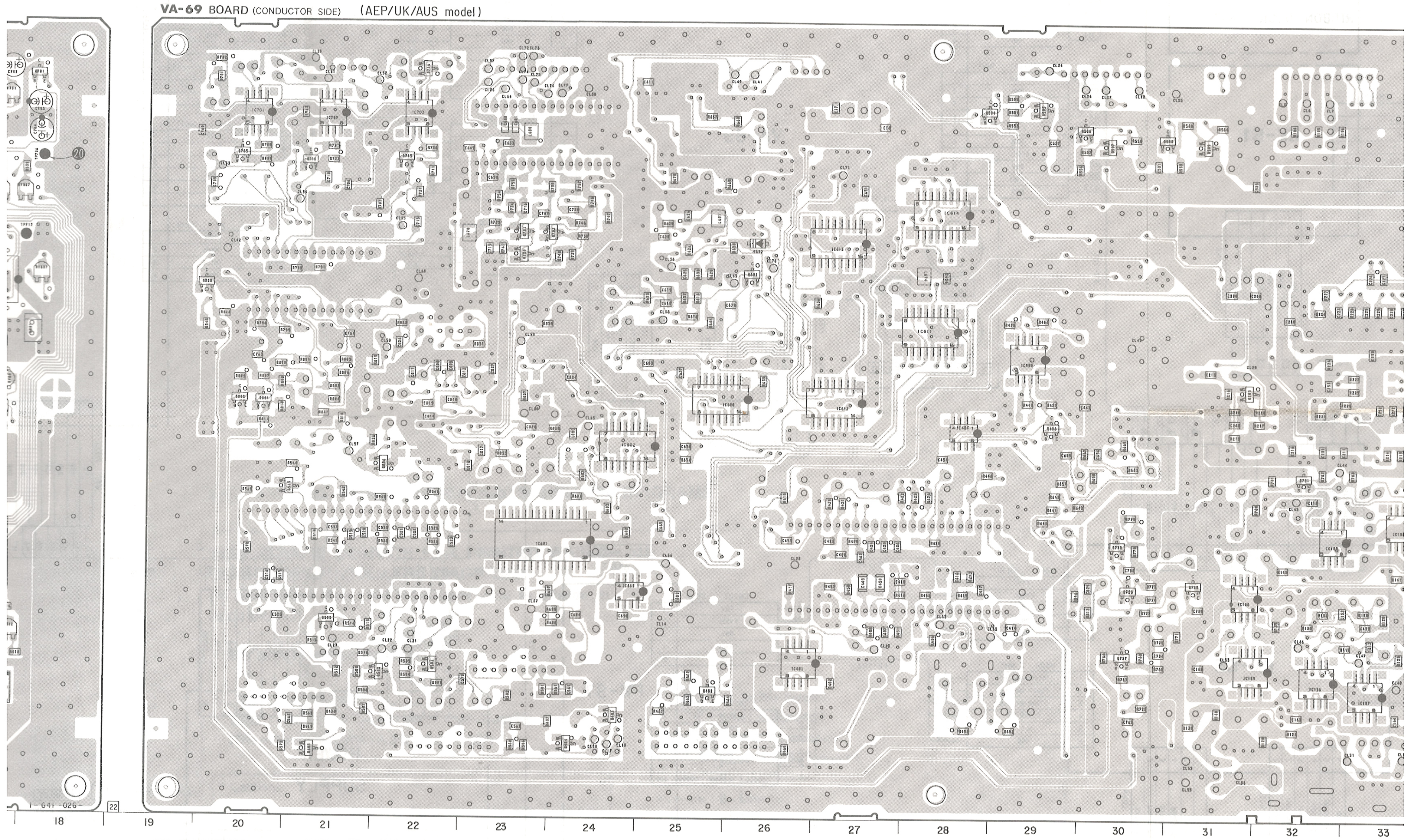
1-641-026-
22
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

VA-69 BOARD (CONDUCTOR SIDE) (E model)

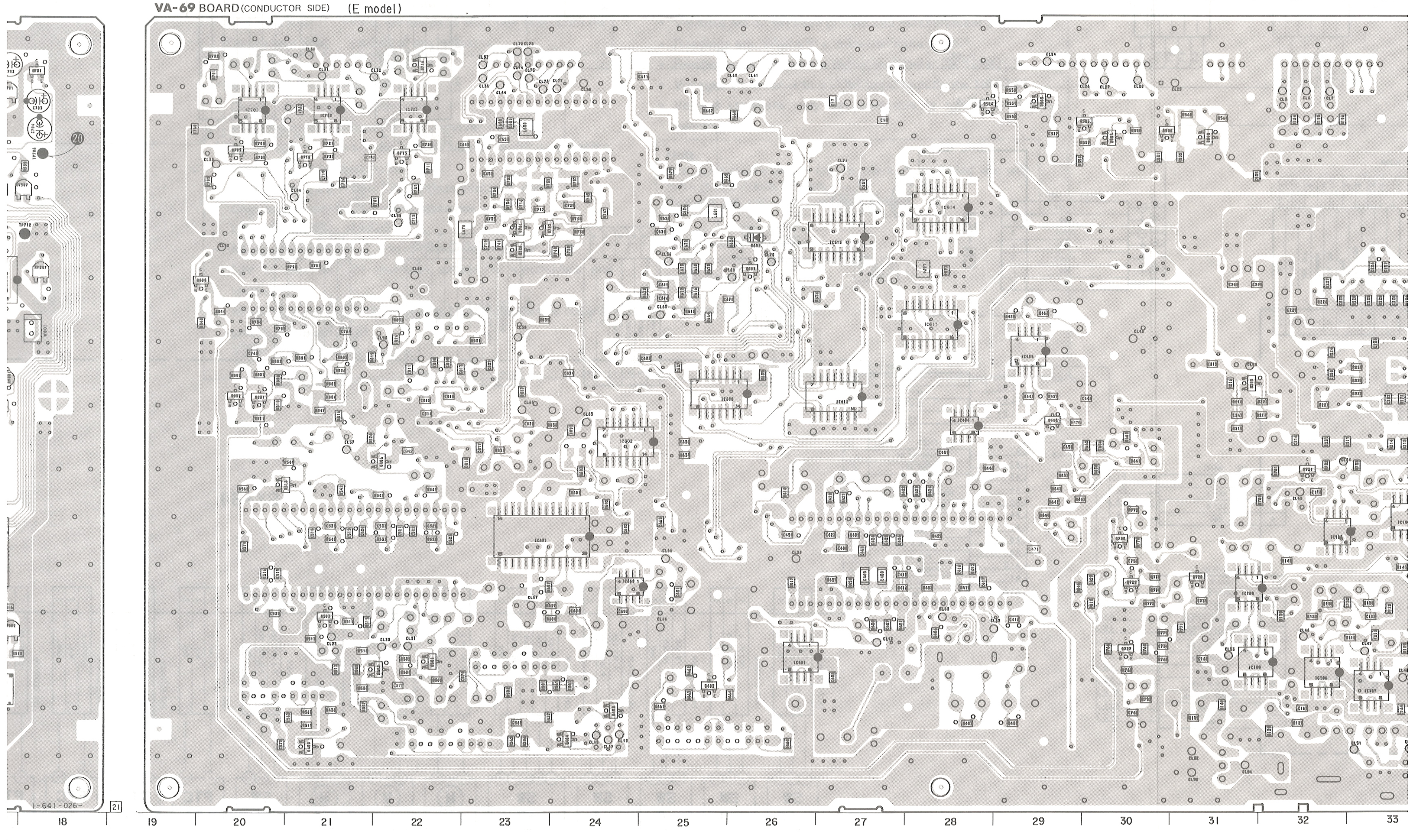


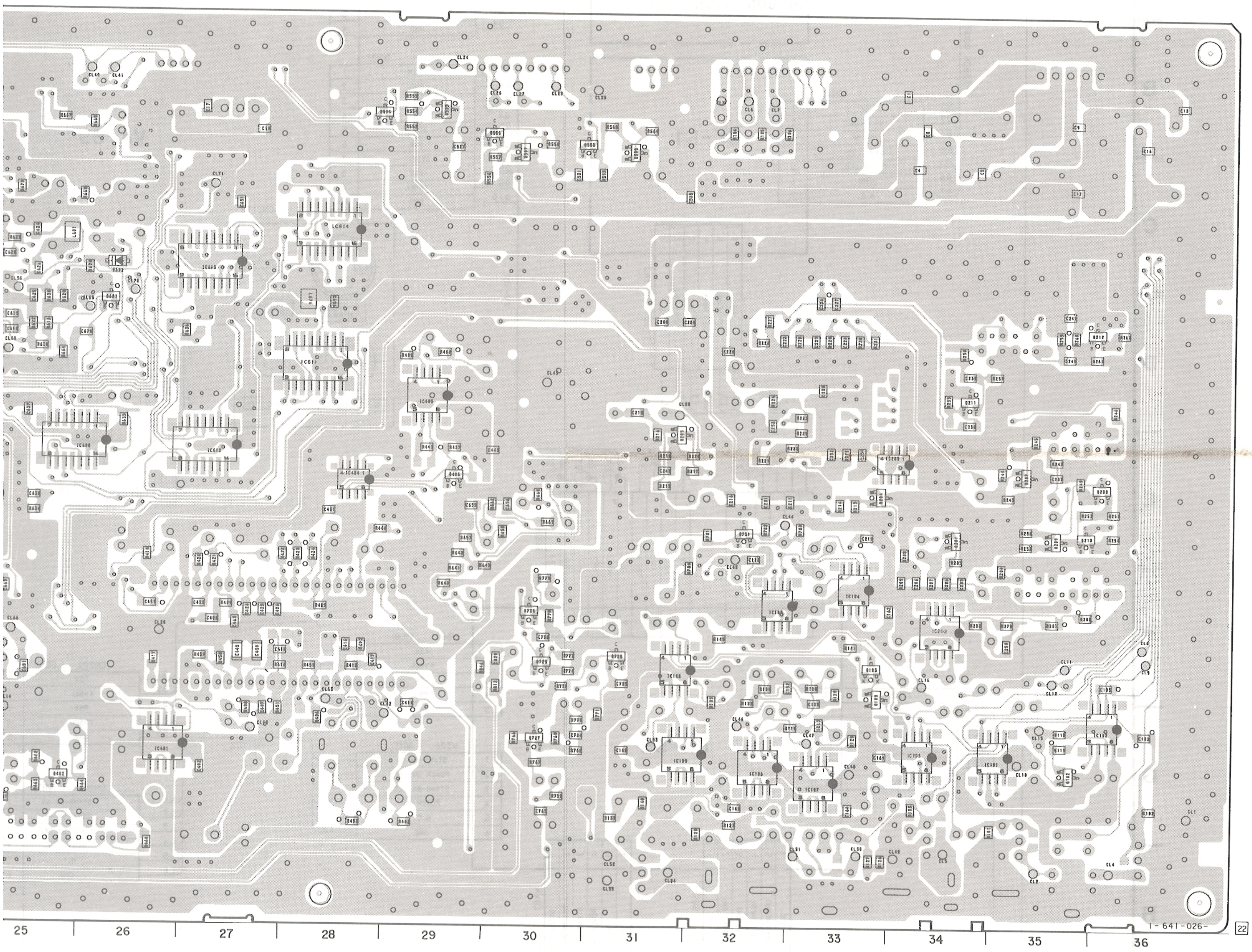
1-641-026-
21
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

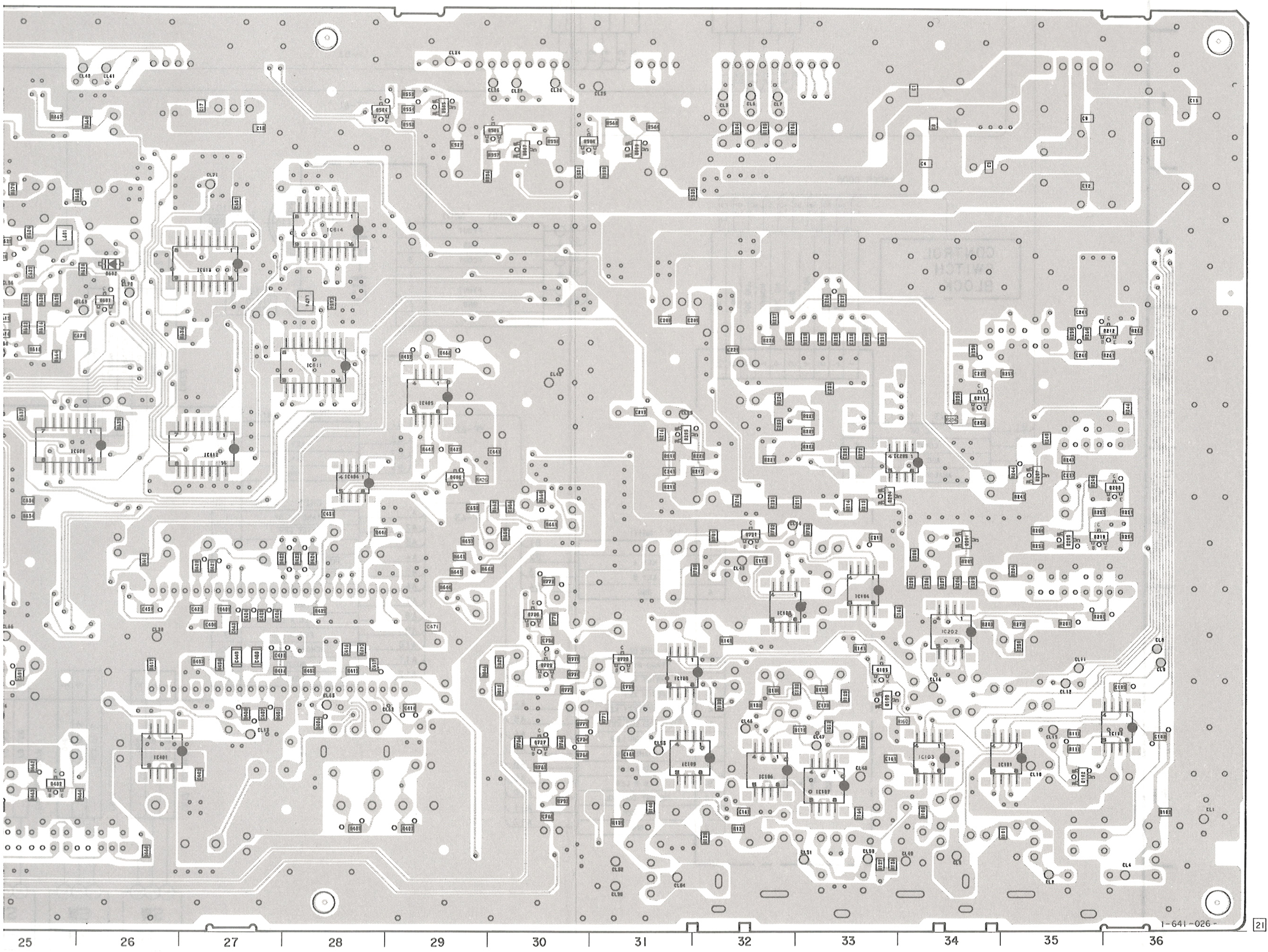
VA-69 BOARD (CONDUCTOR SIDE) (AEP/UK/AUS model)


1-641-026-
22
20
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

VA-69 BOARD (CONDUCTOR SIDE) (E model)


1-641-026-
21
20
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33





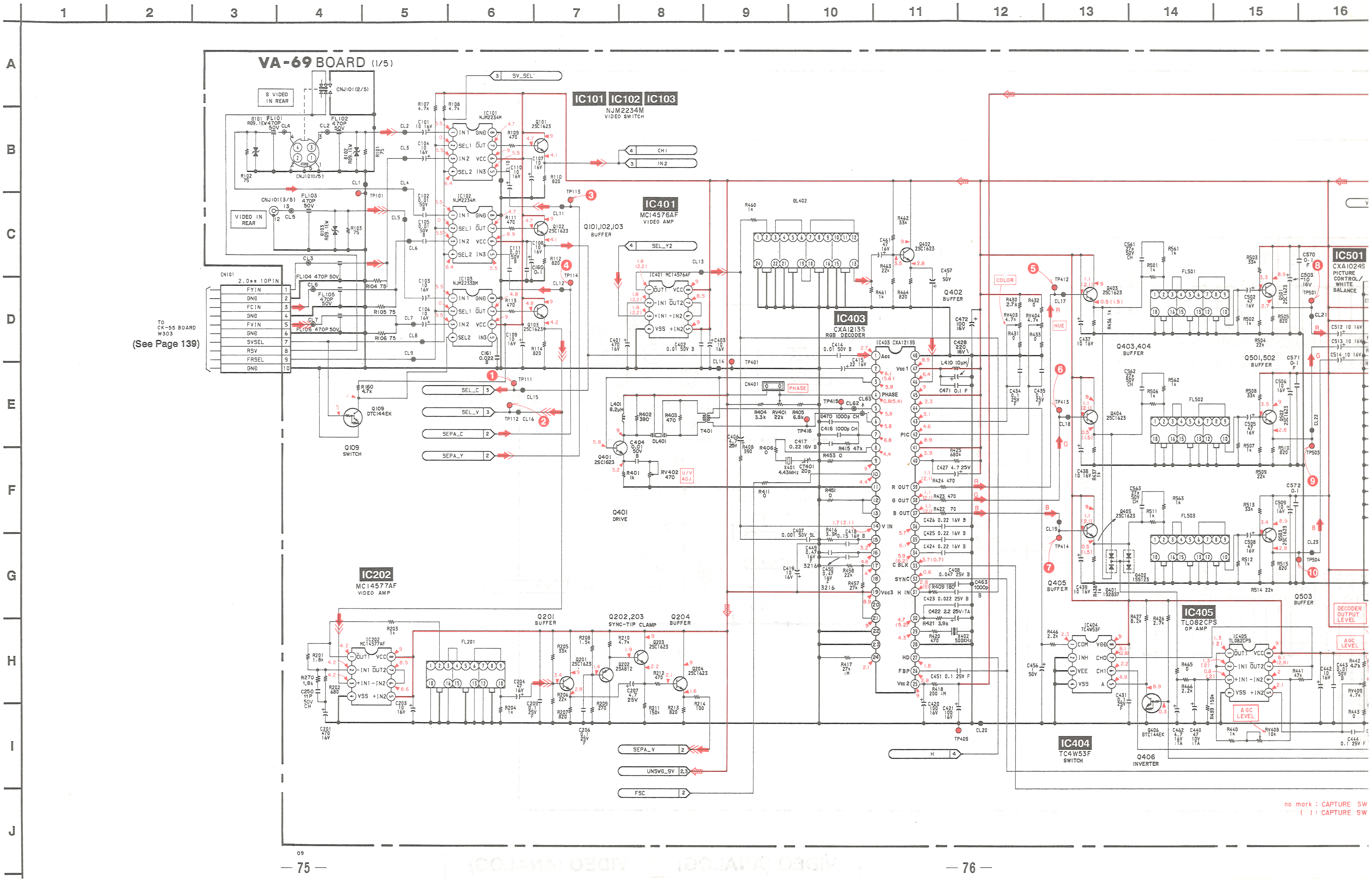
VA-69 BOARD

CN001	A-2
CN101	A-5
CN401	H-8
CN402	A-6
CN403	A-7
CN601	A-14
CN602	A-11
CN701	A-16
CT401	I-11
CT601	F-14
CT603	C-12
CT604	G-12
CT801	D-14
D101	H-1
D102	I-3
D103	I-4
D105	G-33
D106	I-5
D107	I-4
D108	I-6
D401	I-14
D402	I-16
D501	F-16
D502	F-16
D503	B-7
D504	B-7
D601	H-14
D602	C-26
D603	D-13
D701	C-23
D702	C-24
IC001	A-10
IC101	H-35
IC102	H-36
IC103	H-34
IC104	F-33
IC105	F-32
IC106	H-32
IC107	H-33
IC108	G-31
IC109	G-31
IC201	C-6
IC202	G-34
IC203	E-5
IC204	D-5
IC205	E-34
IC401	H-26
IC403	G-10
IC404	E-28
IC405	D-29
IC501	G-166
IC502	B-8
IC601	F-23
IC603	A-13
IC604	F-8
IC605	D-12
IC606	E-12
IC607	F-12
IC608	E-25
IC609	E-11
IC610	D-11
IC611	D-28
IC612	E-27
IC613	C-27
IC614	C-28
IC615	C-10
IC616	B-11
IC617	D-10
IC618	B-14
IC619	F-13
IC650	B-12
IC660	G-24
IC701	B-20
IC702	B-21
IC703	B-22
IC704	B-16
IC705	D-17
IC801	E-15
IC802	E-24
IC803	D-14
Q101	H-3
Q102	H-35
Q103	H-4
Q104	F-6
Q105	H-5
Q106	G-5
Q107	G-6
Q108	G-6
Q109	G-33
Q201	F-34
Q202	F-4
Q203	F-4
Q204	E-33
Q205	E-31
Q206	E-6
Q207	E-35
Q208	E-36
Q209	F-35
Q210	F-35
Q211	D-34
Q212	D-36
Q401	G-8
Q402	H-25
Q403	H-24
Q404	I-24
Q405	I-21
Q406	E-29
Q501	H-22
Q502	H-22
Q503	G-21
Q504	A-28
Q505	A-29
Q506	B-30
Q507	B-30
Q508	B-30
Q509	B-31
Q510	B-7
Q511	B-7
Q513	F-21
Q601	C-26
Q602	E-11
Q650	F-8
Q651	F-8
Q652	E-13
Q701	A-18
Q702	A-17
Q703	B-15
Q704	B-16
Q705	B-20
Q710	B-21
Q715	B-22
Q716	A-22
Q717	B-14
Q718	C-14
Q719	C-14
Q720	C-23
Q727	H-30
Q728	G-31
Q729	G-30
Q730	G-30
Q731	F-32
Q801	E-20
Q802	E-20
Q803	E-16
Q804	D-16
Q805	E-16
Q806	F-22
Q807	D-14
Q808	D-20
RV101	H-5
RV102	H-5
RV103	G-6
RV104	G-6
RV105	H-6
RV202	C-5
RV203	C-5
RV401	E-8
RV402	E-8
RV403	E-9
RV404	E-9
RV408	D-9
RV409	D-9
RV410	E-8
RV501	G-17
RV502	G-17
RV503	B-17
RV504	G-16
RV505	B-17
RV506	F-16
RV507	B-18
RV508	F-17
RV601	D-9
RV602	C-11
RV701	A-17
RV702	A-17
RV703	A-16
RV706	G-7
RV707	F-8
RV801	E-17
RV802	D-16
RV803	E-17
RV804	E-16
RV805	E-14
RV806	F-16
RV807	C-18
RV809	E-14
TP101	H-1
TP111	H-2
TP112	G-3
TP113	G-2
TP114	G-2
TP118	H-5
TP120	H-4
TP121	H-4
TP123	I-7
TP124	H-6
TP201	D-6
TP401	G-13
TP409	G-11
TP412	I-13
TP413	I-13
TP414	I-13
TP415	G-9
TP416	G-9
TP501	H-15
TP503	H-16
TP504	G-16
TP505	A-7
TP506	A-8
TP507	A-8
TP508	A-8
TP650	C-13
TP660	E-14
TP661	G-12
TP662	G-14
TP663	B-10
TP701	A-13
TP702	A-17
TP703	A-17
TP704	A-16
TP706	B-18
TP707	B-17
TP708	C-16
TP709	A-12
TP711	A-12
TP712	A-12
TP713	F-5
TP714	D-7
TP715	F-5
TP801	D-16
TP803	D-14
TP804	E-14

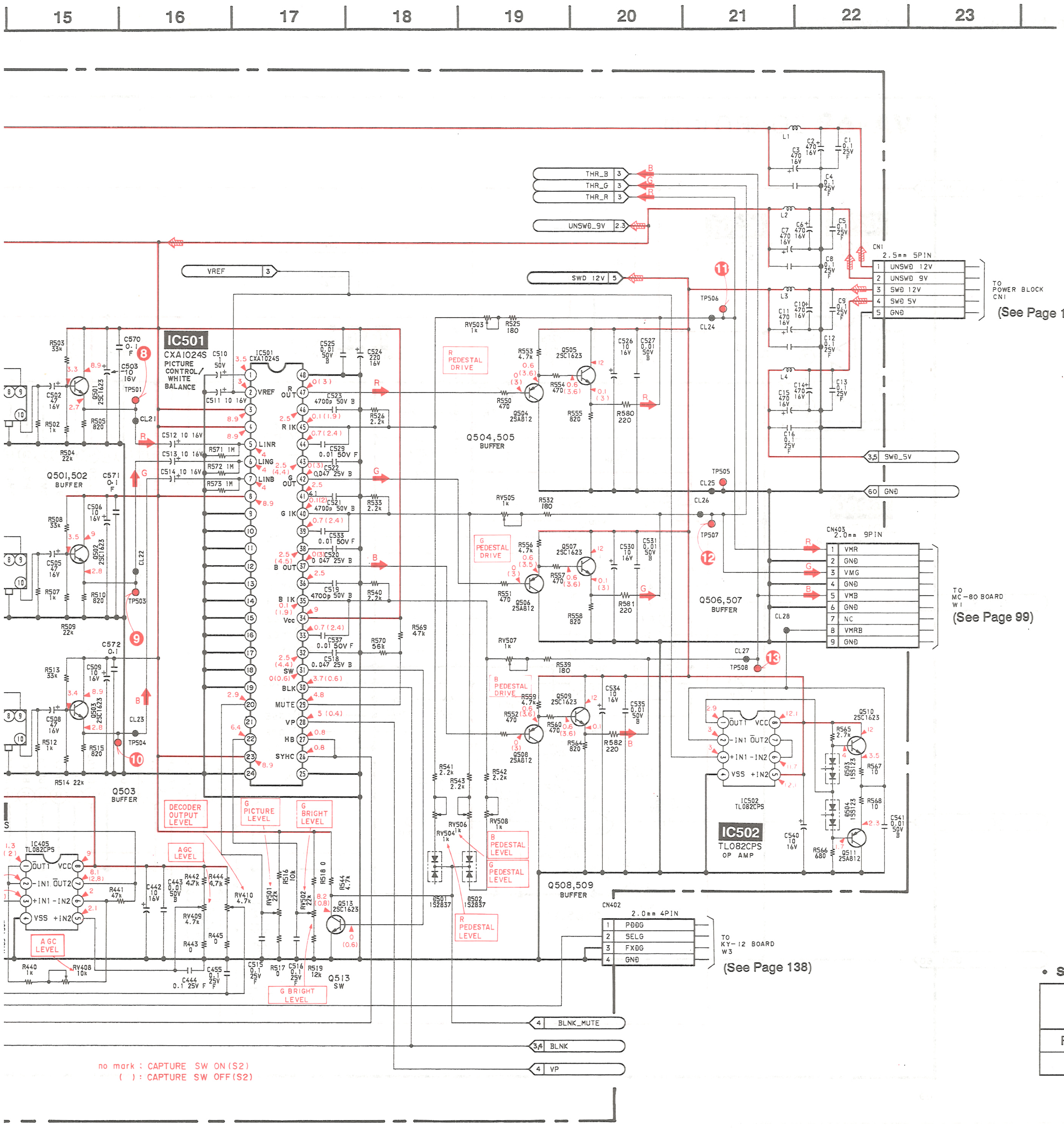
VA-69 (VIDEO (ANALOG)) SCHEMATIC DIAGRAM

— Ref. No. VA-69 BOARD: 1000 series —

- Refer to page 71 for Printed Wiring Board

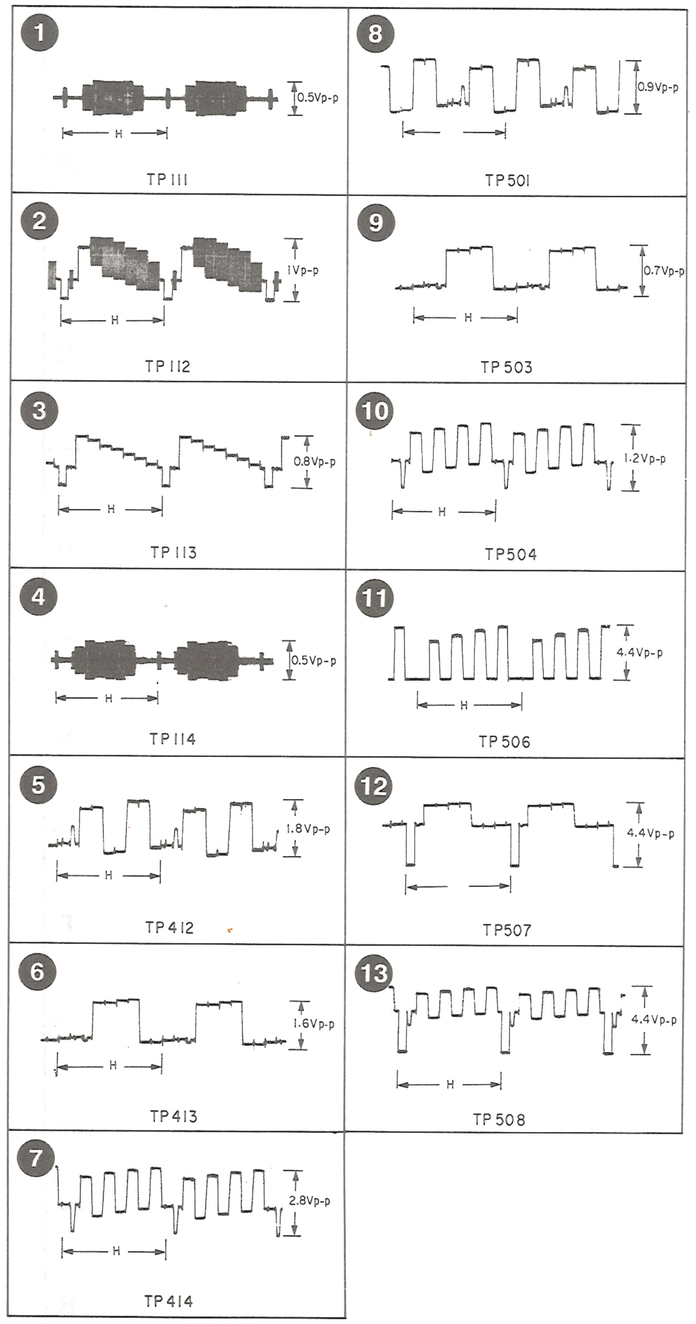

VA-69 BOARD (1/5)
IC101 IC102 IC103
NJM2234M
VIDEO SWITCH
IC401
MC14576AF
VIDEO AMP
Q101,102,103
BUFFER
IC403
CXA1213S
RGB DECODER
Q402
BUFFER
Q403,404
BUFFER
Q501,502
BUFFER
IC501
CXA1024S
PICTURE CONTROL/WHITE BALANCE
IC202
MC14577AF
VIDEO AMP
Q201
BUFFER
Q202,203
SYNC-TIP CLAMP
Q204
BUFFER
Q401
DRIVE
Q109
SWITCH
Q405
BUFFER
Q503
BUFFER
IC404
TC4W53F
SWITCH
IC405
TL082CPS
OP AMP
Q406
INVERTER
S VIDEO IN REAR
VIDEO IN REAR
CN101
2.0mm 10PIN
FYIN
GND
FCIN
GND
FVIN
GND
SVSEL
RSV
FRSEL
GND
TO CK-55 BOARD W303
(See Page 139)
SV_SEL
CH1
IN2
SEL_Y2
SEL_C
SEL_V
SEPA_C
SEPA_Y
SEPA_V
UNSWG_SV
FSC
H
COLOR
HUE
PHASE
U/V ADJ
DECODER OUTPUT LEVEL
AGC LEVEL
no mark : CAPTURE SW
( ) : CAPTURE SW
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

09


15
16
17
18
19
20
21
22
23
IC501
CXA1024S
PICTURE CONTROL/ WHITE BALANCE
Q501,502 BUFFER
Q503 BUFFER
Q504,505 BUFFER
Q506,507 BUFFER
Q508,509 BUFFER
IC502
TL082CPS
OP AMP
IC405 TL082CPS
THR_B
THR_G
THR_R
UNSWD_9V
VREF
SWD 12V
CN1 2.5mm 5PIN
1 UNSWD 12V
2 UNSWD 9V
3 SWD 12V
4 SWD 5V
5 GND
TO POWER BLOCK CN1
(See Page 149)
SWD_5V
GND
CN403 2.0mm 9PIN
1 VMR
2 GND
3 VMG
4 GND
5 VMB
6 GND
7 NC
8 VMRB
9 GND
TO MC-80 BOARD W1
(See Page 99)
CN402 2.0mm 4PIN
1 PDDG
2 SELG
3 FXDG
4 GND
TO KY-12 BOARD W3
(See Page 138)
BLNK_MUTE
BLNK
VP
R PEDESTAL DRIVE
G PEDESTAL DRIVE
B PEDESTAL DRIVE
DECODER OUTPUT LEVEL
G PICTURE LEVEL
G BRIGHT LEVEL
AGC LEVEL
B PEDESTAL LEVEL
G PEDESTAL LEVEL
R PEDESTAL LEVEL
G BRIGHT LEVEL
Q513 SW

no mark : CAPTURE SW ON(S2)
( ) : CAPTURE SW OFF(S2)

VA-69 BOARD(1/5)

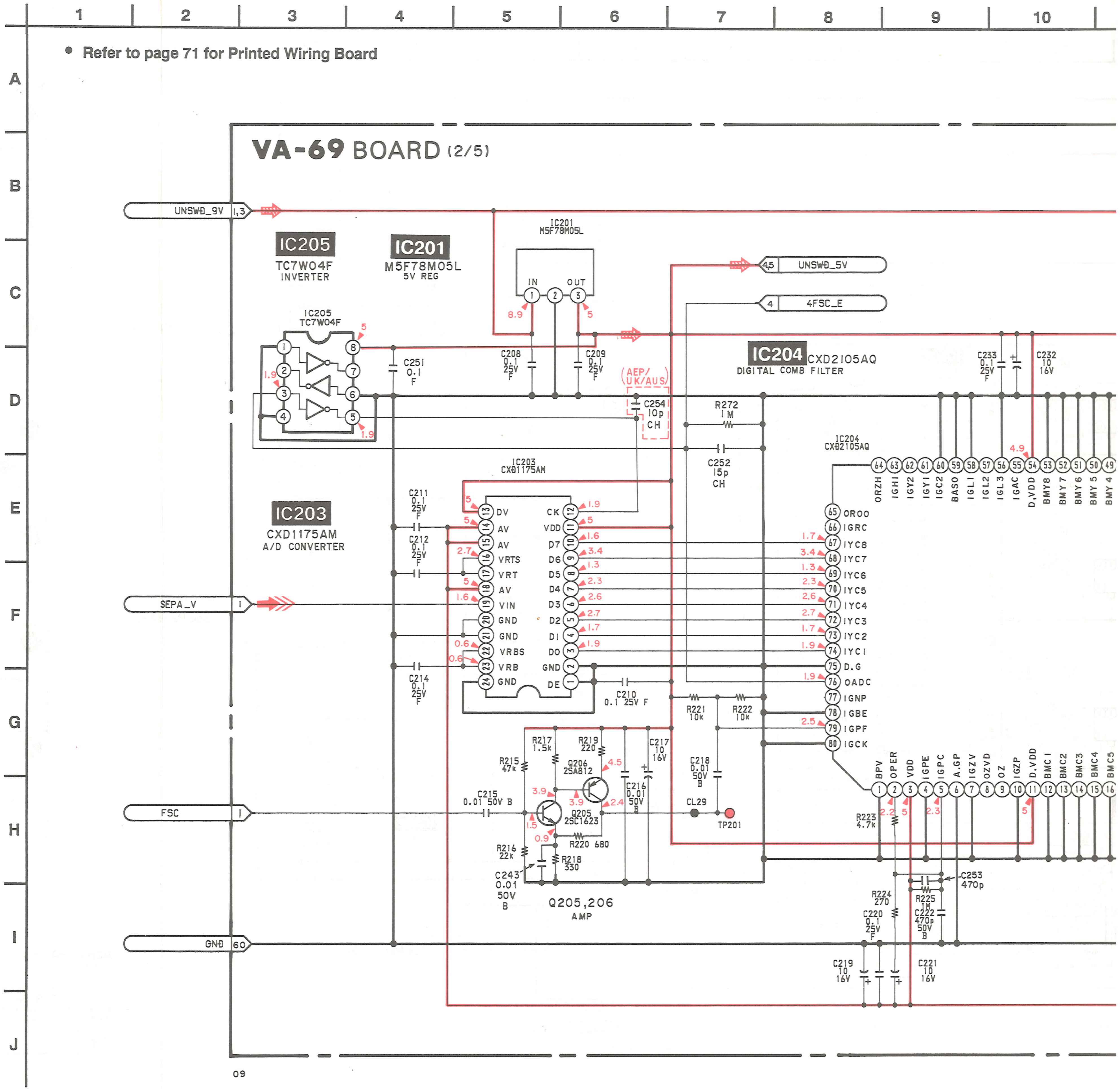


- SIGNAL PATH (ANALOG)

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇒	⇛	
PB				

VA-69 (VIDEO (ANALOG)) SCHEMATIC DIAGRAM

— Ref. No. VA-69 BOARD: 1000 series —

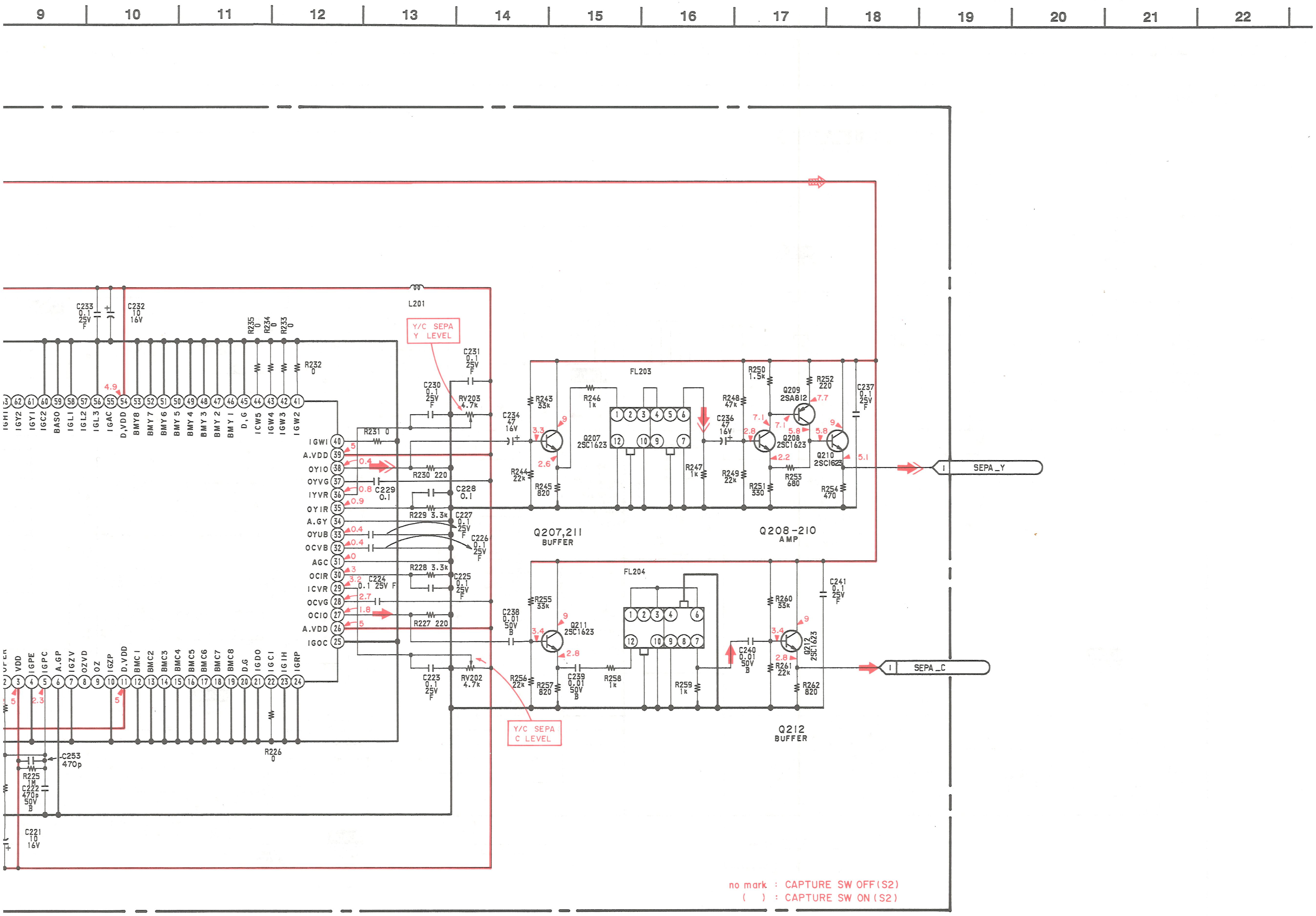


- Refer to page 71 for Printed Wiring Board

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
VA-69 BOARD (2/5)
UNSWD_9V
1,3
IC205
TC7W04F
INVERTER
IC201
M5F78M05L
5V REG
IC201
M5F78M05L
IN
OUT
8.9
5
UNSWD_5V
4,5
4FSC_E
4
IC205
TC7W04F
1.9
1.9
5
C251
0.1
F
C208
0.1
25V
F
C209
0.1
25V
F
(AEP/UK/AUS)
C254
10p
CH
IC204
CXD2105AQ
DIGITAL COMB FILTER
R272
1M
C252
15p
CH
C233
0.1
25V
F
C232
10
16V
4.9
IC204
CXD2105AQ
IC203
CXD1175AM
A/D CONVERTER
IC203
CXD1175AM
C211
0.1
25V
F
C212
0.1
25V
F
C214
0.1
25V
F
DV
AV
AV
VRTS
VRT
AV
VIN
GND
GND
VRBS
VRB
GND
CK
VDD
D7
D6
D5
D4
D3
D2
D1
D0
GND
DE
C210
0.1 25V F
SEPA_V
1
R221
10k
R222
10k
OROO
IGRC
IYC8
IYC7
IYC6
IYC5
IYC4
IYC3
IYC2
IYC1
D.G
OADC
IGNP
IGBE
IGPF
IGCK
ORZH
IGHI
IGY2
IGY1
IGC2
BASO
IGL1
IGL2
IGL3
IGAC
D.VDD
BMY8
BMY7
BMY6
BMY5
BMY4
BPV
OPER
VDD
IGPE
IGPC
A.GP
IGZV
OZVD
OZ
IGZP
D.VDD
BMC1
BMC2
BMC3
BMC4
BMC5
R217
1.5k
R219
220
C217
10
16V
R215
47k
Q206
2SA812
C218
0.01
50V
B
C216
0.01
50V
B
C215
0.01 50V B
Q205
2SC1623
CL29
TP201
FSC
1
R216
22k
R220 680
R218
330
C243
0.01
50V
B
Q205,206
AMP
R223
4.7k
C253
470p
R224
270
R225
1M
C220
0.1
25V
F
C222
470p
50V
B
GND
60
C219
10
16V
C221
10
16V
09

- SIGNAL PATH (ANALOG)

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇒	⇛	
PB				



9
10
11
12
13
14
15
16
17
18
19
20
21
22
C233 0.1 25V F
C232 10 16V
L201
Y/C SEPA Y LEVEL
R235 0
R234 0
R233 0
R232 0
C231 0.1 25V F
C230 0.1 25V F
RV203 4.7k
R231 0
IGWI
A.VDD
OYIO
OYVG
IYVR
OYIR
A.GY
OYUB
OCVB
AGC
OCIR
ICVR
OCVG
OCIO
A.VDD
IGOC
R230 220
C229 0.1
C228 0.1
R229 3.3k
C227 0.1 25V F
C226 0.1 25V F
R228 3.3k
C225 0.1 25V F
C224 0.1 25V F
R227 220
C223 0.1 25V F
RV202 4.7k
IGY2
IGY1
IGC2
BASO
IGL1
IGL2
IGL3
IGAC
D.VDD
BMY8
BMY7
BMY6
BMY5
BMY4
BMY3
BMY2
BMY1
D.G
ICW5
IGW4
IGW3
IGW2
VDD
IGPE
IGPC
A.GP
IGZV
OZVD
OZ
IGZP
D.VDD
BMC1
BMC2
BMC3
BMC4
BMC5
BMC6
BMC7
BMC8
D.G
IGDO
IGCI
IGIH
IGRP
C253 470p
R225 1M
C222 470p 50V B
C221 10 16V
R226 0
C234 47 16V
R243 33k
R244 22k
R245 820
Q207 2SC1623
R246 1k
FL203
R247 1k
C236 47 16V
R248 47k
R249 22k
R250 1.5k
R251 330
Q209 2SA812
R252 220
Q208 2SC1623
R253 680
Q210 2SC1623
R254 470
C237 0.1 25V F
Q207,211 BUFFER
Q208-210 AMP
SEPA_Y
C238 0.01 50V B
R255 33k
Q211 2SC1623
R256 22k
R257 820
C239 0.01 50V B
R258 1k
FL204
R259 1k
C240 0.01 50V B
R260 33k
Q212 2SC1623
R261 22k
R262 820
C241 0.1 25V F
Y/C SEPA C LEVEL
Q212 BUFFER
SEPA_C

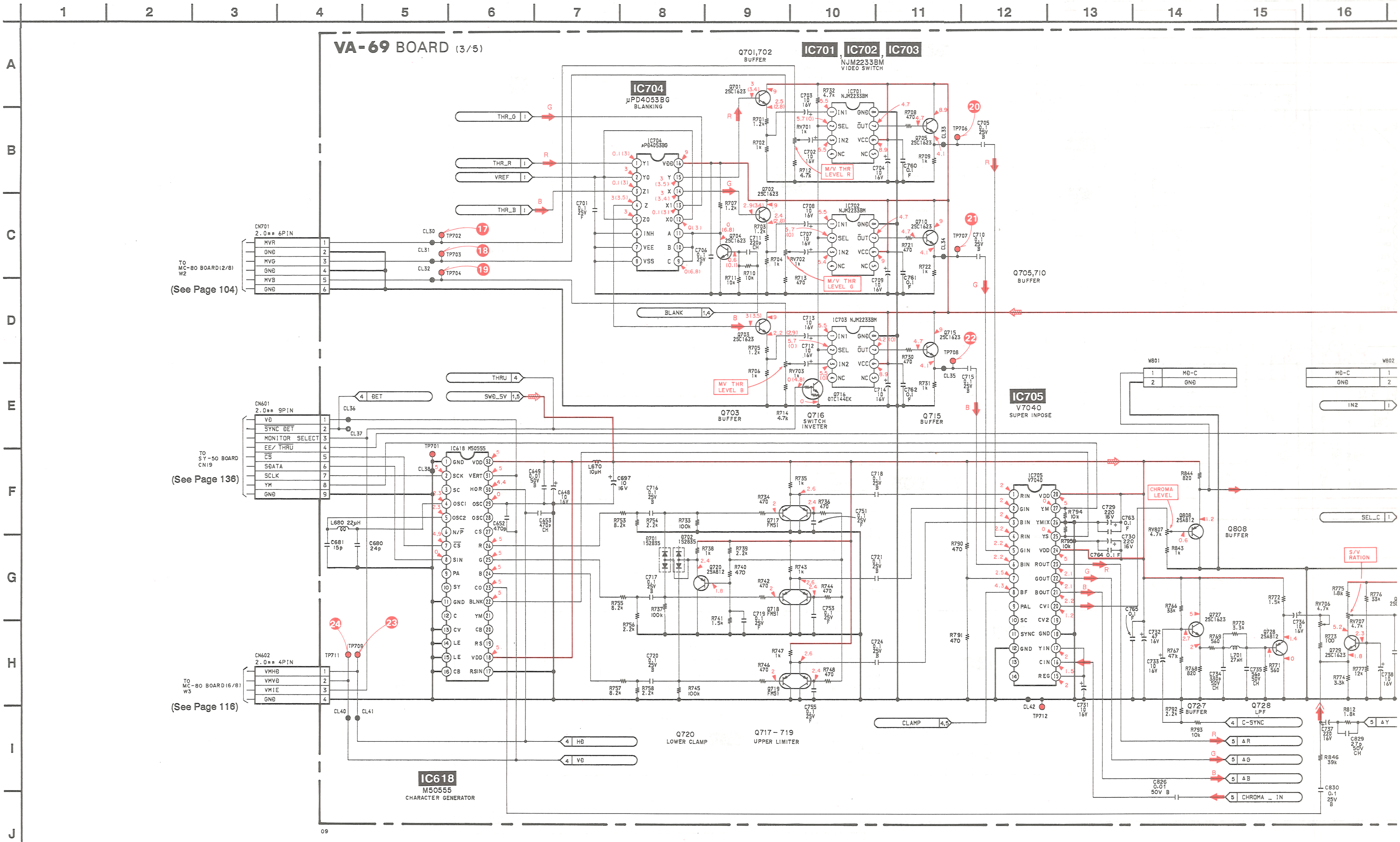
no mark : CAPTURE SW OFF(S2)
( ) : CAPTURE SW ON (S2)

VIDEO (ANALOG) VIDEO (ANALOG)

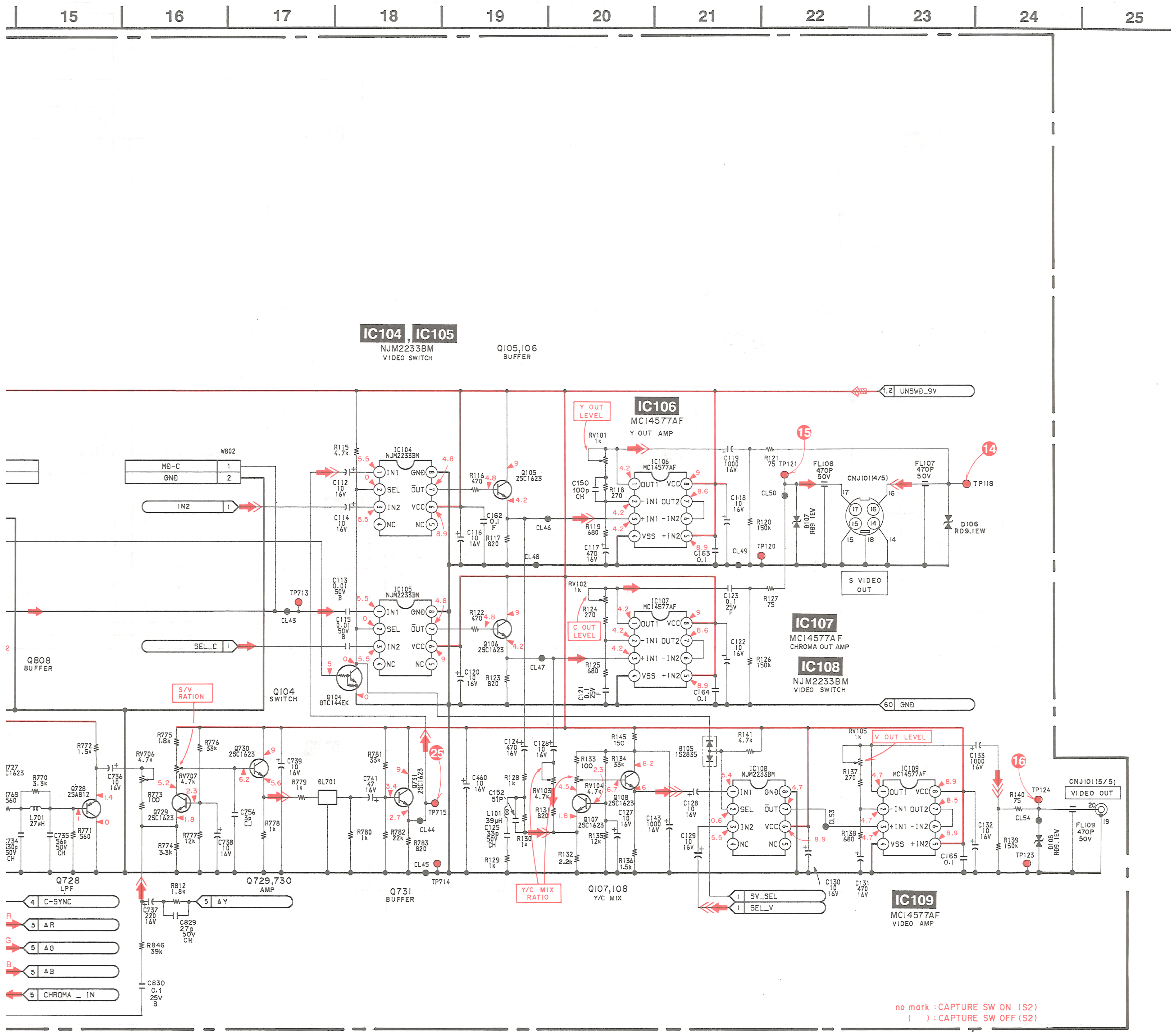
VA-69 (VIDEO (ANALOG)) SCHEMATIC DIAGRAM

— Ref. No. VA-69 BOARD: 1000 series —

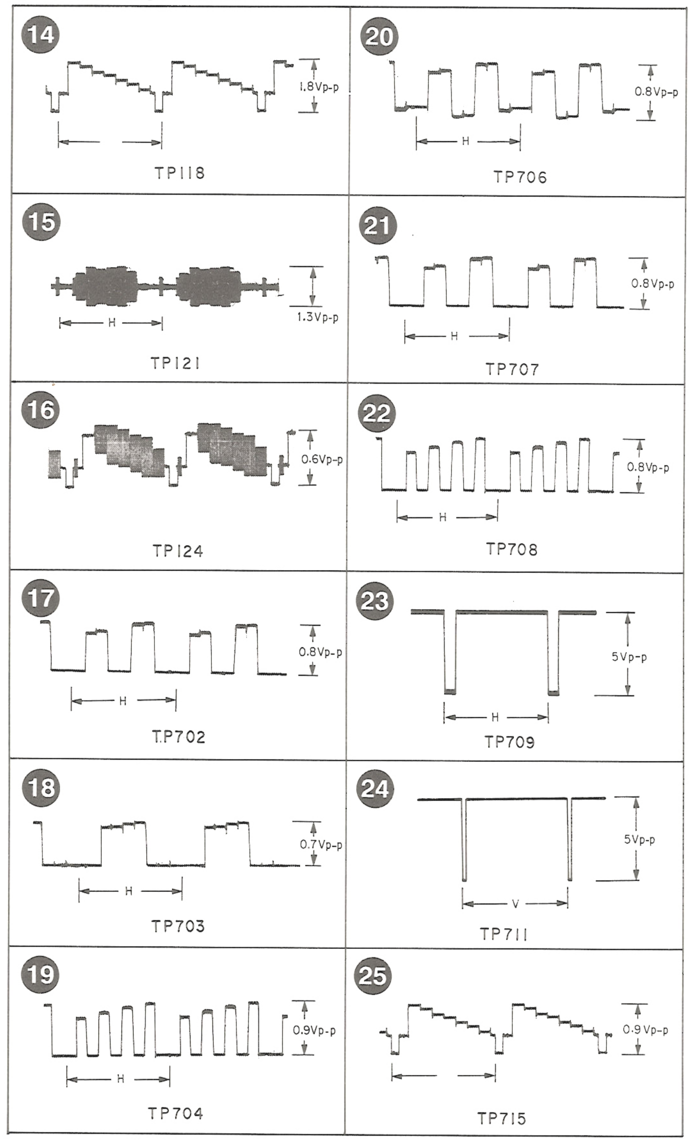
- Refer to page 71 for Printed Wiring Board



VA-69 BOARD (3/5)
IC704
µPD4053BG
BLANKING
IC701, IC702, IC703
NJM2233BM
VIDEO SWITCH
Q701,702
BUFFER
Q705,710
BUFFER
Q703
BUFFER
Q716
SWITCH
INVETER
Q715
BUFFER
IC705
V7040
SUPER INPOSE
Q808
BUFFER
IC618
M50555
CHARACTER GENERATOR
Q720
LOWER CLAMP
Q717 – 719
UPPER LIMITER
Q727
BUFFER
Q728
LPF
CN701
2.0mm 6PIN
MVR
GND
MVG
GND
MVB
GND
TO
MC-80 BOARD(2/8)
W2
(See Page 104)
CN601
2.0mm 9PIN
VD
SYNC DET
MONITOR SELECT
EE/ THRU
CS
SDATA
SCLK
YM
GND
TO
SY-50 BOARD
CN19
(See Page 136)
CN602
2.0mm 4PIN
VMHD
VMVD
VMIE
GND
TO
MC-80 BOARD(6/8)
W3
(See Page 116)
THR_G
THR_R
VREF
THR_B
BLANK
THRU
SWD_SV
DET
HD
VD
CLAMP
C-SYNC
ΔR
ΔG
ΔB
CHROMA _ IN
IN2
SEL_C
ΔY
W801
MD-C
GND
W802
CHROMA LEVEL
S/V RATION
M/V THR LEVEL R
M/V THR LEVEL G
MV THR LEVEL B
TP702
TP703
TP704
TP706
TP707
TP708
TP701
TP709
TP711
TP712
17
18
19
20
21
22
23
24
09


15
16
17
18
19
20
21
22
23
24
25
IC104 , IC105
NJM2233BM
VIDEO SWITCH
Q105,106
BUFFER
IC106
MC14577AF
Y OUT AMP
Y OUT LEVEL
C OUT LEVEL
IC107
MC14577AF
CHROMA OUT AMP
IC108
NJM2233BM
VIDEO SWITCH
IC109
MC14577AF
VIDEO AMP
UNSWD_9V
GND
S VIDEO OUT
CNJ101(4/5)
CNJ101(5/5)
VIDEO OUT
TP118
TP120
TP121
TP123
TP124
TP713
TP714
TP715
MD-C
GND
IN2
SEL_C
W802
Q808
BUFFER
Q104
SWITCH
S/V RATION
Q728
LPF
Q729,730
AMP
Q731
BUFFER
Y/C MIX RATIO
Q107,108
Y/C MIX
V OUT LEVEL
C-SYNC
R
G
B
CHROMA _ IN
SV_SEL
SEL_V
no mark : CAPTURE SW ON (S2)
( ) : CAPTURE SW OFF (S2)

VA-69 BOARD (3/5)



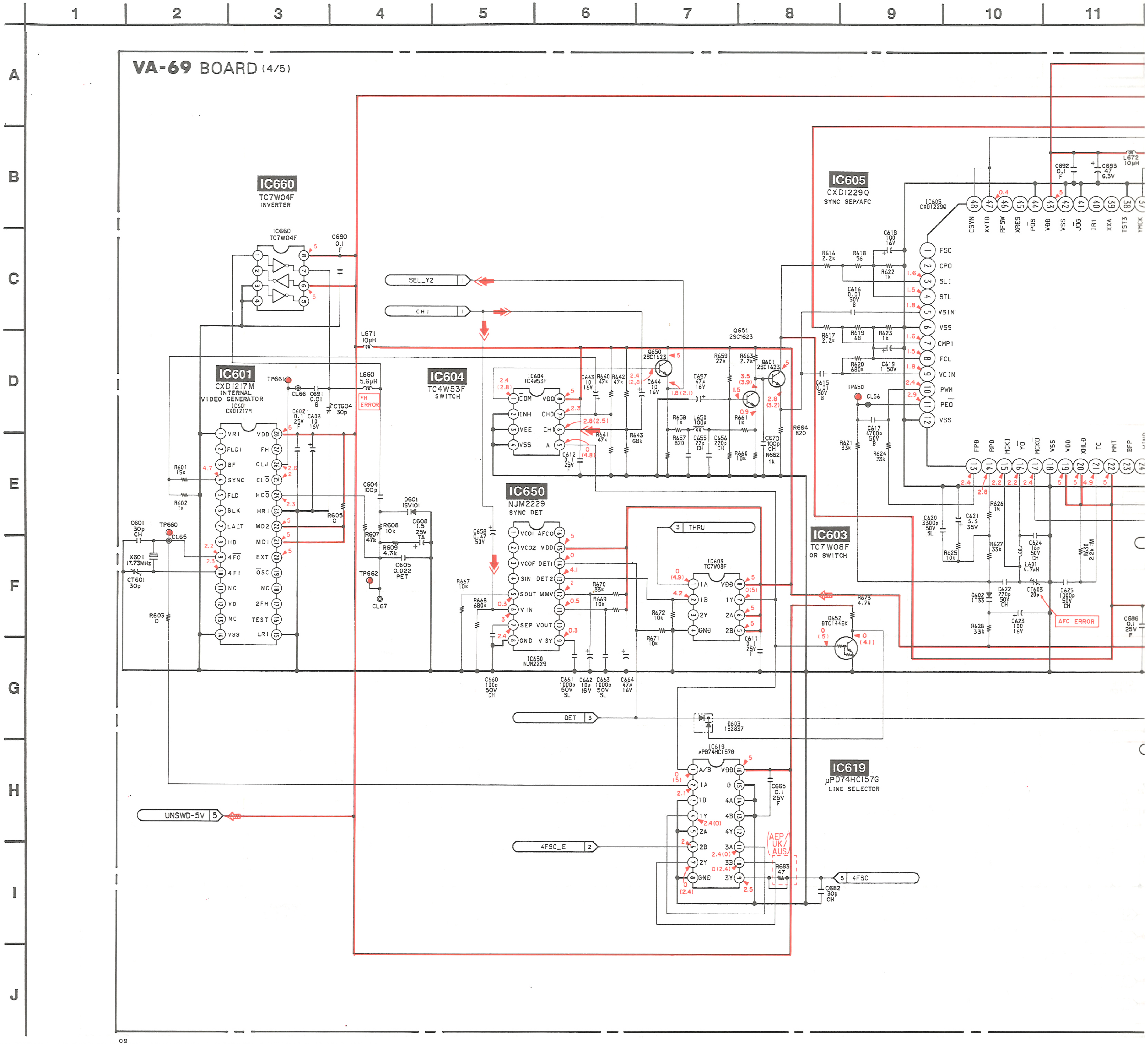
- SIGNAL PATH (ANALOG)

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇛	
PB				

VA-69 (VIDEO (ANALOG)) SCHEMATIC DIAGRAM

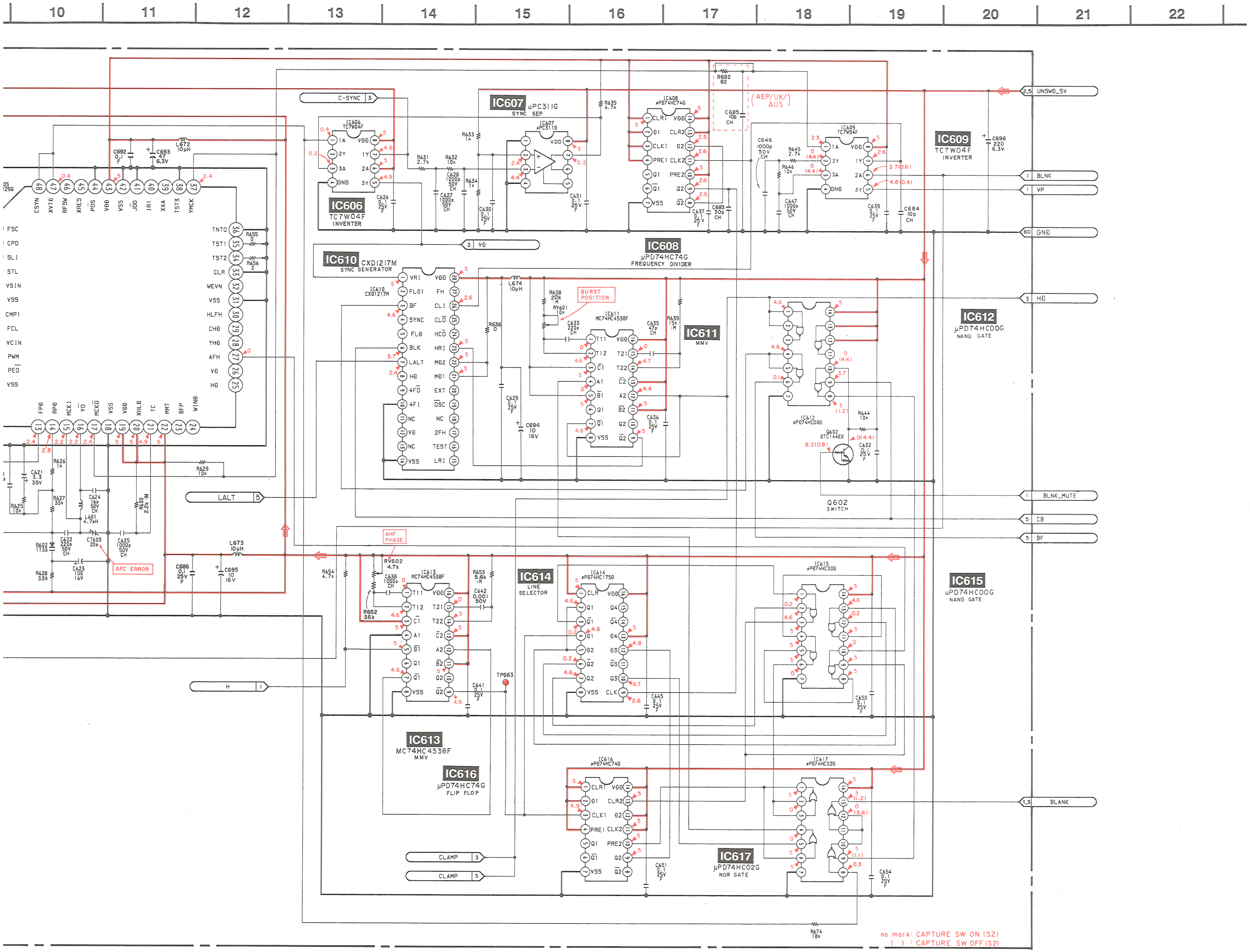
— Ref. No. VA-69 BOARD: 1000 series —

- **Refer to page 71 for Printed Wiring Board**


VA-69 BOARD (4/5)
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
IC660
TC7W04F
INVERTER
IC601
CXD1217M
INTERNAL VIDEO GENERATOR
IC604
TC4W53F
SWITCH
IC650
NJM2229
SYNC DET
IC605
CXD1229Q
SYNC SEP/AFC
IC603
TC7W08F
OR SWITCH
IC619
μPD74HC157G
LINE SELECTOR
SEL_Y2
CH I
UNSWD-5V
DET
4FSC_E
4FSC
THRU
FH ERROR
AFC ERROR
(AEP/UK/AUS)
X601 17.73MHz
Q650 2SC1623
Q651 2SC1623
Q601 2SC1623
Q652 DTC144EK
D601 1SV101
D603 1S2837
L671 10μH
L660 5.6μH
TP661
TP660
TP662
TP650
CL65
CL66
CL67
CL56

- **SIGNAL PATH (ANALOG)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	
PB				

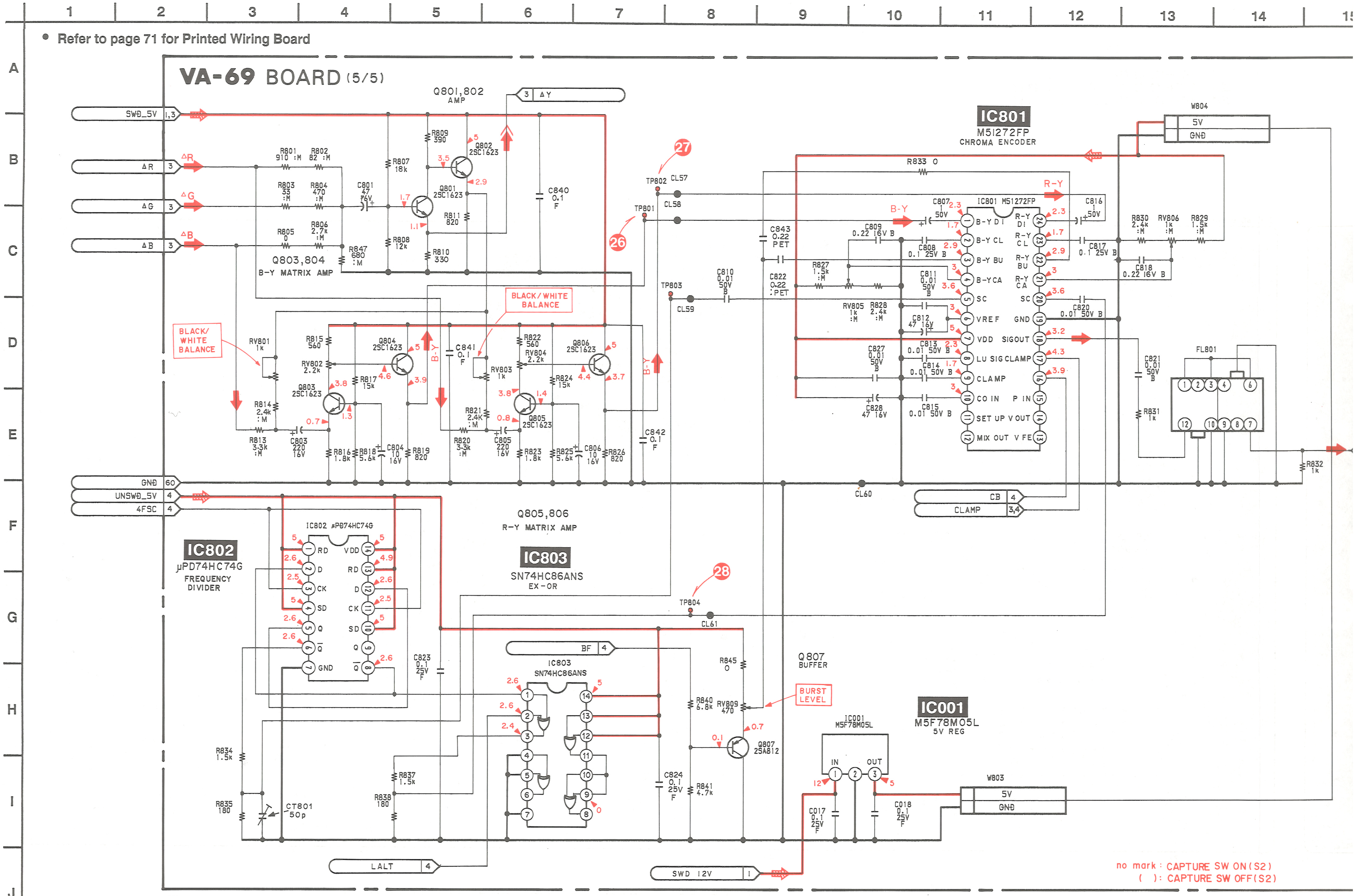

10
11
12
13
14
15
16
17
18
19
20
21
22
IC606
TC7W04F
INVERTER
IC607
uPC311G
SYNC SEP
IC608
μPD74HC74G
FREQUENCY DIVIDER
IC609
TC7W04F
INVERTER
IC610
CXD1217M
SYNC GENERATOR
IC611
MMV
IC612
μPD74HC00G
NAND GATE
Q602
SWITCH
IC613
MC74HC4538F
MMV
IC614
LINE SELECTOR
IC615
μPD74HC00G
NAND GATE
IC616
μPD74HC74G
FLIP FLOP
IC617
μPD74HC02G
NOR GATE
C-SYNC
VD
LALT
H
CLAMP
CLAMP
UNSWD_5V
BLNK
VP
GND
HD
BLNK_MUTE
CB
BF
BLANK
AEP/UK/AUS
BURST POSITION
AHF PHASE
AFC ERROR
TP663
CSYN
XVTD
RFSW
XRES
PDS
VDD
VSS
JOG
IRI
XXA
TST3
YMCK
FSC
CPO
SLI
STL
VSIN
VSS
CMP1
FCL
VCIN
PWM
PEO
VSS
TNTO
TST1
TST2
CLR
WEVN
VSS
HLFH
CHD
YHD
AFH
VD
HD
FPD
RPD
MCK1
YD
MCKO
VSS
VDD
XHLD
TC
MMT
BFP
WIND

no mark: CAPTURE SW ON (S2)
( ) : CAPTURE SW OFF (S2)

VA-69 (VIDEO (ANALOG)) SCHEMATIC DIAGRAM

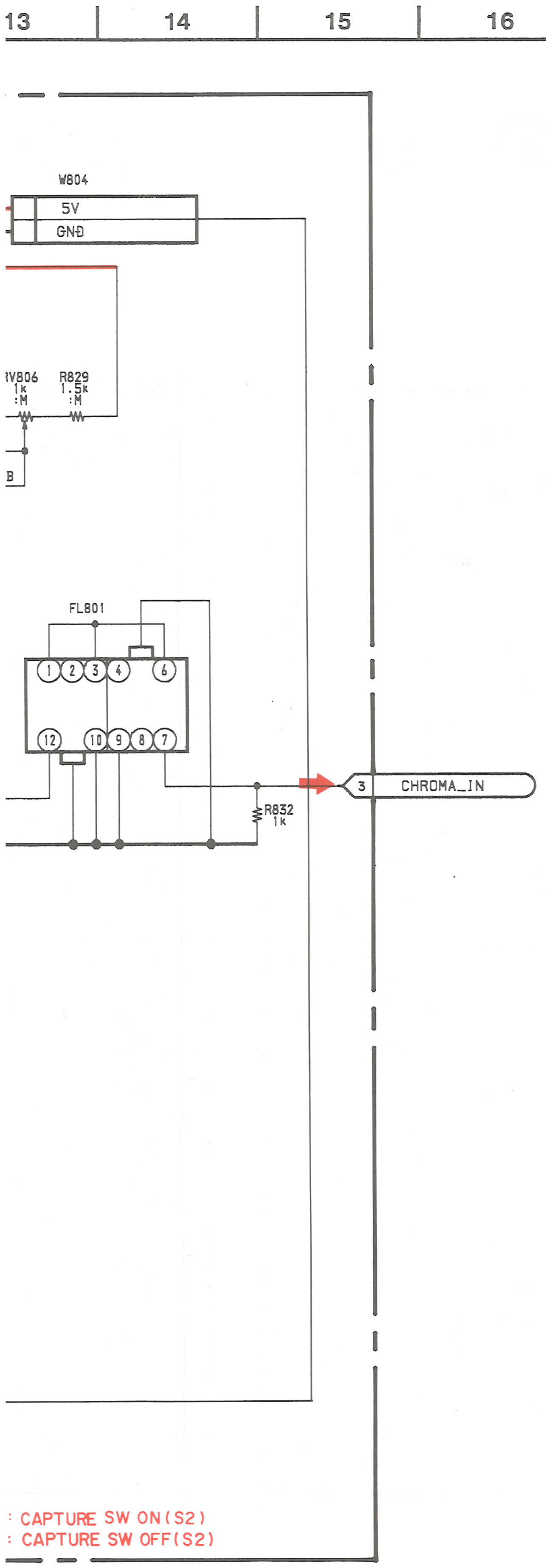
— Ref. No. VA-69 BOARD: 1000 series —

- Refer to page 71 for Printed Wiring Board


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
VA-69 BOARD (5/5)
Q801,802 AMP
Q803,804 B-Y MATRIX AMP
Q805,806 R-Y MATRIX AMP
SWD_5V 1,3
ΔR 3
ΔG 3
ΔB 3
ΔY 3
GND 60
UNSWD_5V 4
4FSC 4
BLACK/WHITE BALANCE
BLACK/WHITE BALANCE
R801 910 :M
R802 82 :M
R803 33 :M
R804 470 :M
R805 0
R806 2.7k :M
R807 18k
R808 12k
R809 390
R810 330
R811 820
R847 680 :M
C801 47 16V
C840 0.1 F
Q801 2SC1623
Q802 2SC1623
Q803 2SC1623
Q804 2SC1623
Q805 2SC1623
Q806 2SC1623
RV801 1k
RV802 2.2k
RV803 1k
RV804 2.2k
R813 3.3k :M
R814 2.4k :M
R815 560
R816 1.8k
R817 15k
R818 5.6k
R819 820
R820 3.3k :M
R821 2.4k :M
R822 560
R823 1.8k
R824 15k
R825 5.6k
R826 820
C803 220 16V
C804 10 16V
C805 220 16V
C806 10 16V
C841 0.1 F
C842 0.1 F
B-Y
R-Y
TP801
TP802
TP803
TP804
CL57
CL58
CL59
CL60
CL61
IC801 M51272FP CHROMA ENCODER
B-Y DI
B-Y CL
B-Y BU
B-YCA
SC
VREF
VDD
LU SIG CLAMP
CLAMP
CO IN
SET UP V OUT
MIX OUT
R-Y DI
R-Y CL
R-Y BU
R-Y CA
SC
GND
SIGOUT
P IN
V FE
R833 0
C807 1 50V
C808 0.1 25V B
C809 0.22 16V B
C810 0.01 50V B
C811 0.01 50V B
C812 47 16V
C813 0.01 50V B
C814 0.01 50V B
C815 0.01 50V B
C816 1 50V
C817 0.1 25V B
C818 0.22 16V B
C820 0.01 50V B
C821 0.01 50V B
C822 0.22 PET
C827 0.01 50V B
C828 47 16V
C843 0.22 PET
R827 1.5k :M
R828 2.4k :M
RV805 1k :M
R829 1.5k :M
R830 2.4k :M
RV806 1k :M
R831 1k
R832 1k
W804 5V GND
FL801
CB 4
CLAMP 3,4
IC802 μPD74HC74G FREQUENCY DIVIDER
RD
D
CK
SD
Q
Q̄
GND
VDD
C823 0.1 25V F
IC803 SN74HC86ANS EX-OR
BF 4
R834 1.5k
R835 180
CT801 50p
R837 1.5k
R838 180
C824 0.1 25V F
R840 6.8k
R841 4.7k
R845 0
RV809 470
BURST LEVEL
Q807 BUFFER
Q807 2SA812
IC001 M5F78M05L 5V REG
IN
OUT
C017 0.1 25V F
C018 0.1 25V F
W803 5V GND
LALT 4
SWD 12V 1

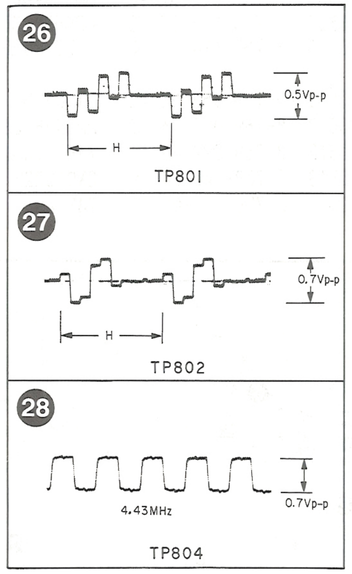
no mark : CAPTURE SW ON (S2)
( ): CAPTURE SW OFF (S2)

09


13
14
15
16
17
18
19
20
W804
5V
GND
IV806
1k
:M
R829
1.5k
:M
B
FL801
1
2
3
4
6
12
10
9
8
7
R832
1k
3
CHROMA_IN

: CAPTURE SW ON (S2)
: CAPTURE SW OFF (S2)

VA-69 BOARD (5/5)



- **SIGNAL PATH (ANALOG)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡⋙	
PB				

MC-80 (VIDEO (DIGITAL)) PRINTED WIRING BOARD

— Ref. No. MC-80 BOARD: 2000 series —

Note:
- ○: Through hole

〈 DIODE 〉

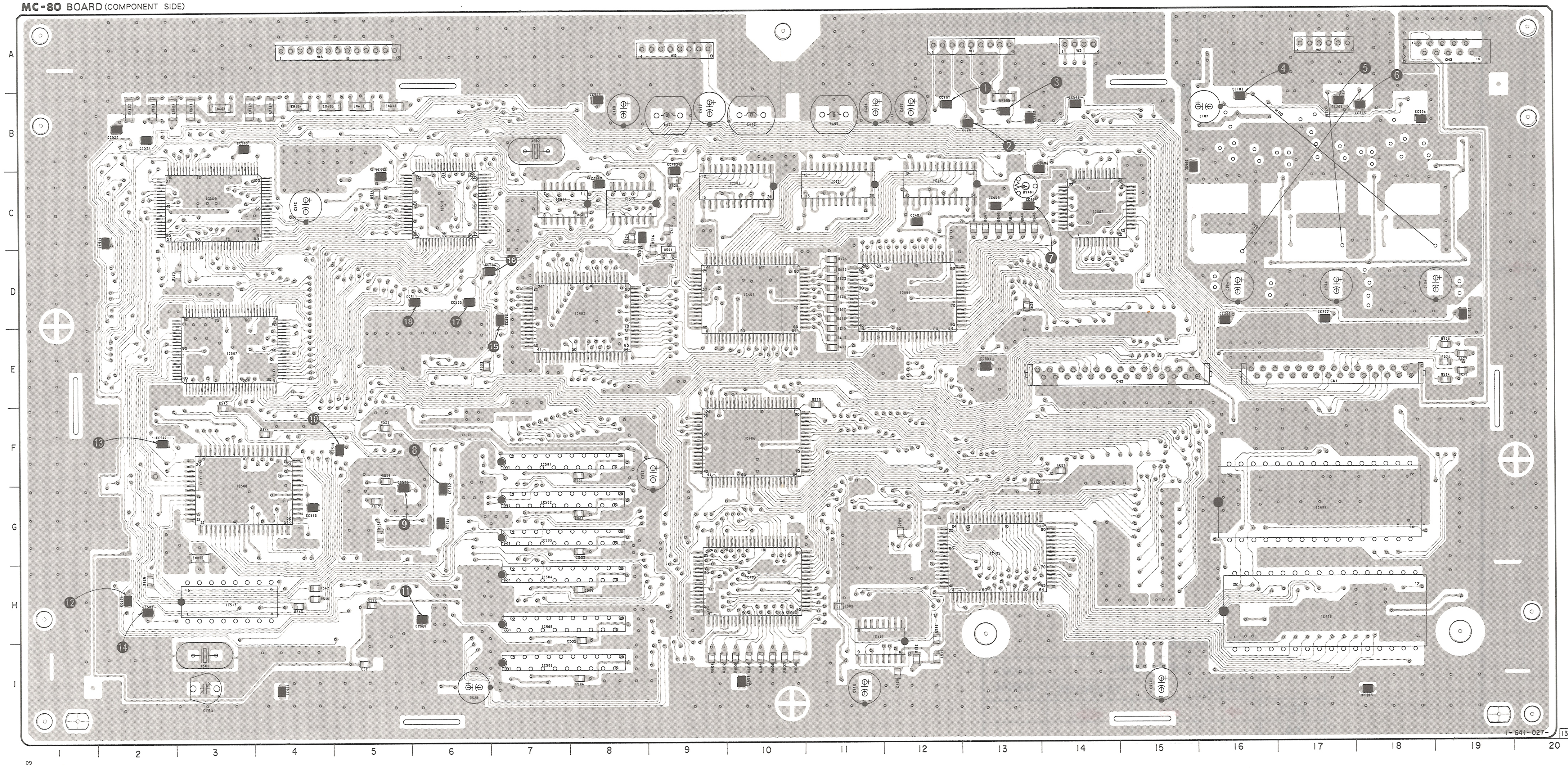
D101	8-719-800-76	DIODE	1SS226
D201	8-719-800-76	DIODE	1SS226
D301	8-719-800-76	DIODE	1SS226
D501	8-719-800-76	DIODE	1SS226

〈 IC 〉

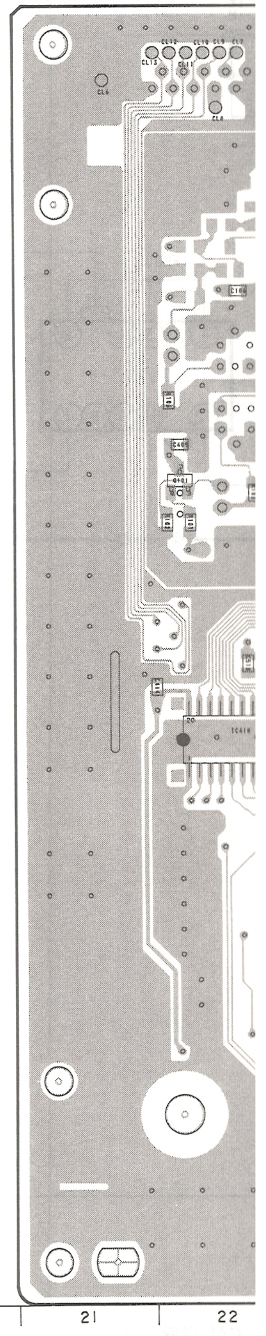
IC101	8-752-334-55	IC	CXD1175AM
IC102	8-759-053-58	IC	IDT6116SA25S0
IC201	8-752-334-55	IC	CXD1175AM
IC202	8-759-053-58	IC	IDT6116SA25S0
IC301	8-752-334-55	IC	CXD1175AM
IC302	8-759-053-58	IC	IDT6116SA25S0
IC401	8-759-154-50	IC	CXD8301Q
IC402	8-759-154-50	IC	CXD8301Q
IC403	8-759-154-50	IC	CXD8301Q
IC404	8-759-154-50	IC	CXD8301Q
IC405	8-759-154-50	IC	CXD8301Q
IC406	8-759-154-50	IC	CXD8301Q
IC407	8-752-032-93	IC	CXA1260Q-Z
IC408	8-759-051-58	IC	uPD23C1001EC-573
IC409	8-759-051-59	IC	uPD23C1001EC-574
IC410	8-759-038-00	IC	MC74HC574AF
IC411	8-759-232-58	IC	TC74HC139AF
IC501	8-759-043-61	IC	HM514400AZ7
IC502	8-759-043-61	IC	HM514400AZ7
IC503	8-759-043-61	IC	HM514400AZ7
IC504	8-759-043-61	IC	HM514400AZ7
IC505	8-759-043-61	IC	HM514400AZ7
IC506	8-759-043-61	IC	HM514400AZ7
IC507	8-759-114-07	IC	uPD65013GF-407-3BA
IC508	8-759-114-09	IC	uPD65006GF-250-3B8
IC509	8-759-053-96	IC	CXD8328Q
IC510	8-759-069-24	IC	HD6435328RB40F
IC512	8-759-992-78	IC	74F257ASJ-T5L
IC513	8-759-140-94	IC	CXD1332P
IC514	8-759-948-01	IC	74F04SJ
IC515	8-759-989-03	IC	74F32SJ
IC516	8-759-053-60	IC	74F86SJ-L5
IC517	8-759-989-01	IC	74F08SJ

Q101	8-729-1
Q201	8-729-1
Q301	8-729-1

MC-80 BOARD (COMPONENT SIDE)



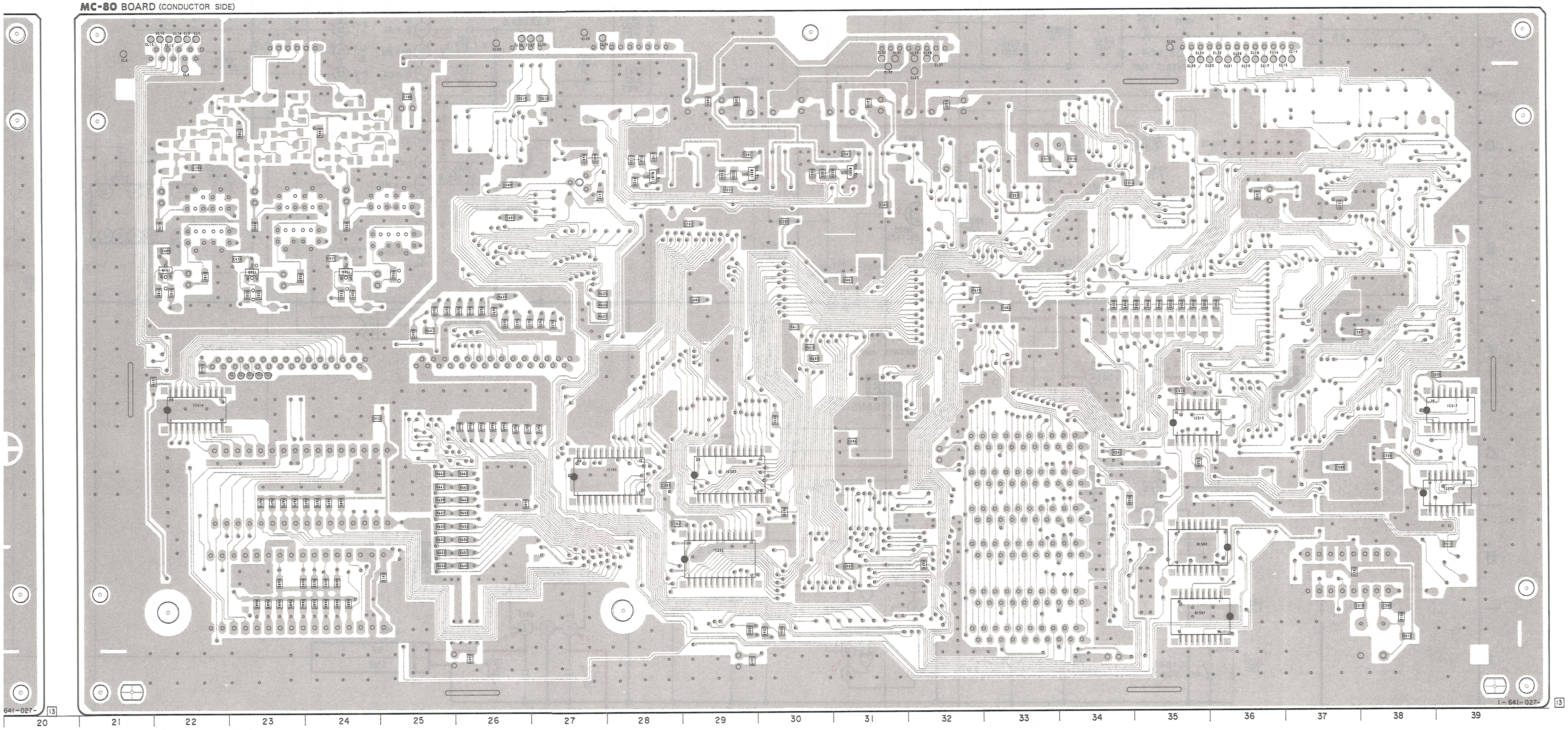
MC-80 BOARD (CONDUCTOR



〈 TRANSISTOR 〉

Q101	8-729-100-66	TRANSISTOR	2SC1623-L6
Q201	8-729-100-66	TRANSISTOR	2SC1623-L6
Q301	8-729-100-66	TRANSISTOR	2SC1623-L6

MC-80 BOARD (CONDUCTOR SIDE)



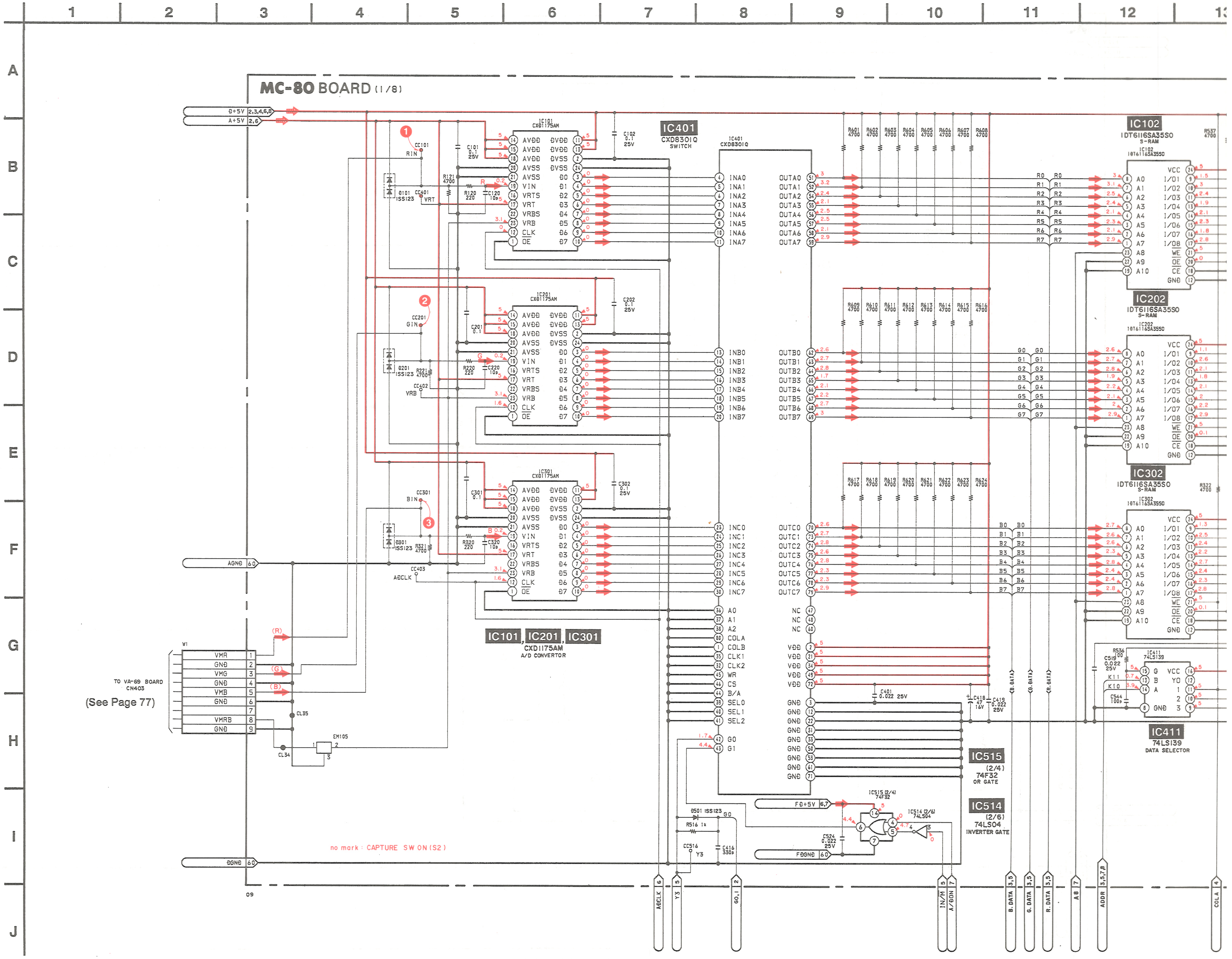
MC-80 BOARD

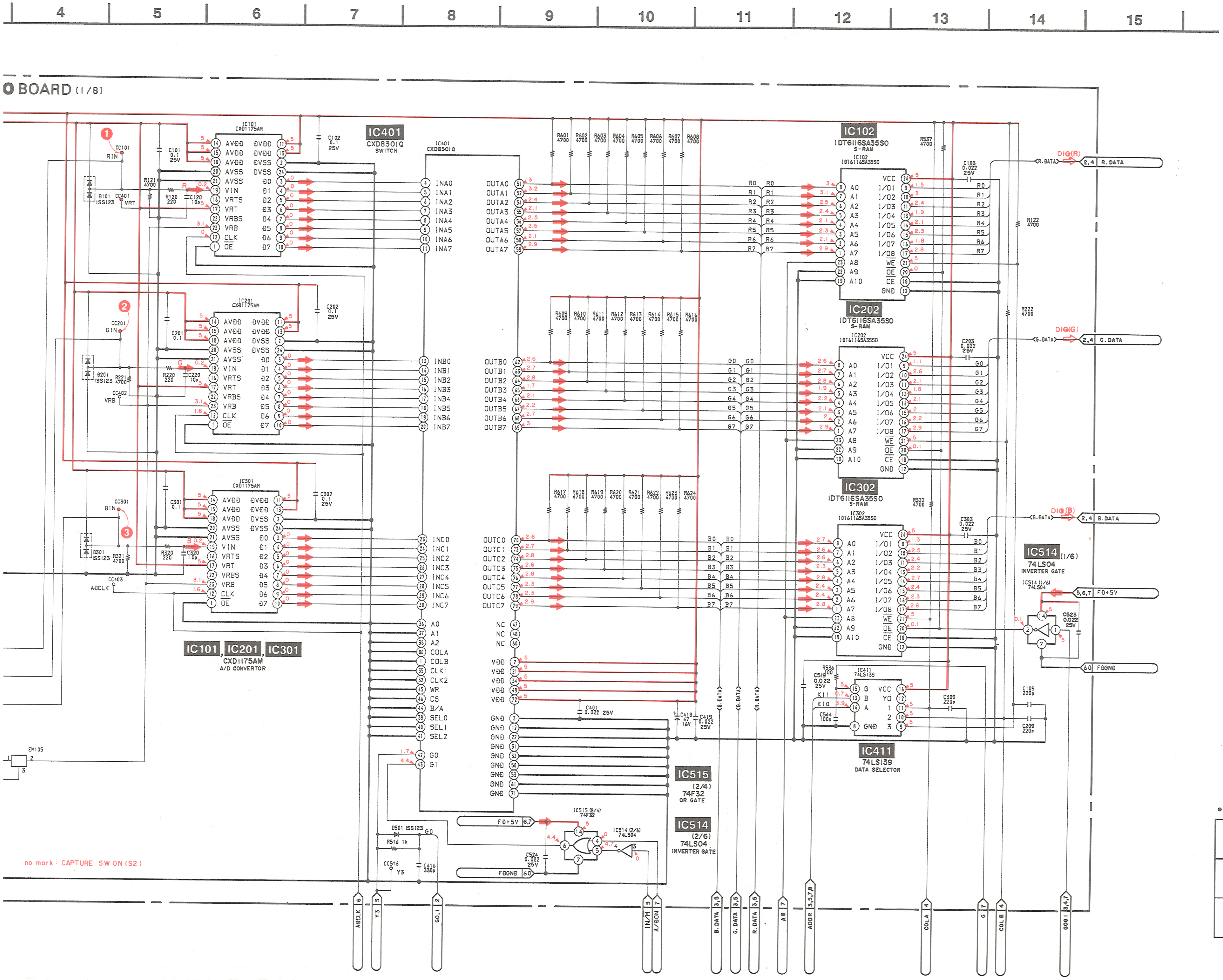
CC101	B-12
CC102	D-19
CC103	B-16
CC201	B-13
CC202	D-17
CC203	B-17
CC301	B-13
CC302	D-16
CC303	B-17
CC401	C-12
CC402	B-13
CC403	C-9
CC404	C-13
CC405	C-13
CC406	C-13
CC501	G-6
CC502	G-6
CC503	D-7
CC504	D-6
CC505	D-6
CC506	H-2
CC507	F-2
CC508	H-2
CC509	G-5
CC510	F-5
CC511	D-5
CC512	B-14
CC513	B-3
CC514	C-2
CC515	C-5
CC516	C-8
CC517	C-8
CC518	G-4
CC519	H-6
CC520	B-2
CC521	B-2
CC900	E-13
CC901	I-4
CC902	I-10
CC903	I-18
CC905	B-8
CC906	B-18
D101	C-28
D201	C-29
D301	C-30
D501	D-9
IC101	C-12
IC102	G-27
IC201	C-11
IC202	H-29
IC301	C-9
IC302	G-29
IC401	D-10
IC402	D-8
IC403	H-10
IC404	D-12
IC405	G-13
IC406	F-10
IC407	C-14
IC408	H-17
IC409	G-17
IC410	F-22
IC411	H-11
IC501	F-7
IC502	G-7
IC503	G-7
IC504	H-7
IC505	H-7
IC506	I-7
IC507	E-3
IC508	G-3
IC509	C-3
IC510	C-6
IC512	F-35
IC513	H-3
IC514	C-7
IC515	C-8
IC516	G-38
IC517	F-38
Q101	D-22
Q102	B-22
Q103	B-22
Q104	B-22
Q201	D-23
Q202	B-23
Q203	B-23
Q204	B-23
Q301	D-24
Q302	C-24
Q303	C-24
Q304	B-24

MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

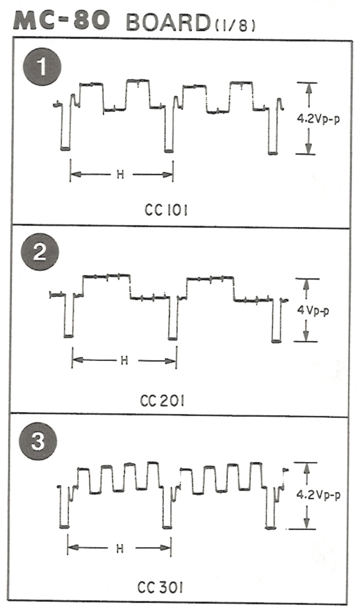
— Ref. No. MC-80 BOARD: 2000 series —

- Refer to page 95 for Printed Wiring Board


MC-80 BOARD (1/8)
D+5V 2,3,4,6,8
A+5V 2,6
IC401
CXD8301Q
SWITCH
IC102
IDT6116SA35SO
S-RAM
IC202
IDT6116SA35SO
S-RAM
IC302
IDT6116SA35SO
S-RAM
IC101, IC201, IC301
CXD1175AM
A/D CONVERTOR
IC411
74LS139
DATA SELECTOR
IC515
(2/4)
74F32
OR GATE
IC514
(2/6)
74LS04
INVERTER GATE
AGND 60
DGND 60
FD+5V 6,7
FDGND 60
VMR
GND
VMG
GND
VMB
GND
VMRB
GND
TO VA-69 BOARD
CN403
(See Page 77)
no mark : CAPTURE SW ON (S2)
ADCLK 6
Y3 5
G0,1 2
IN/M 5
A/DON 7
B.DATA 3,5
G.DATA 3,5
R.DATA 3,5
A8 7
ADDR 3,5,7,8
COLA 4
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J



O BOARD (1/8)
IC101 CXD1175AM
IC201 CXD1175AM
IC301 CXD1175AM
IC101, IC201, IC301
CXD1175AM
A/D CONVERTOR
IC401
CXD8301Q
SWITCH
IC102
IDT6116SA35SO
S-RAM
IC202
IDT6116SA35SO
S-RAM
IC302
IDT6116SA35SO
S-RAM
IC411
74LS139
DATA SELECTOR
IC515 (2/4)
74F32
OR GATE
IC514 (2/6)
74LS04
INVERTER GATE
IC514 (1/6)
74LS04
INVERTER GATE
RIN
GIN
BIN
VRT
VRB
ADCLK
EM105
DIG(R)
R. DATA
DIG(G)
G. DATA
DIG(B)
B. DATA
FD+5V
FDGND
ADCLK
Y3
G0,1
IN/M
A/DON
B. DATA
G. DATA
R. DATA
A8
ADDR
COLA
G
COLB
GOG1
no mark : CAPTURE SW ON (S2)



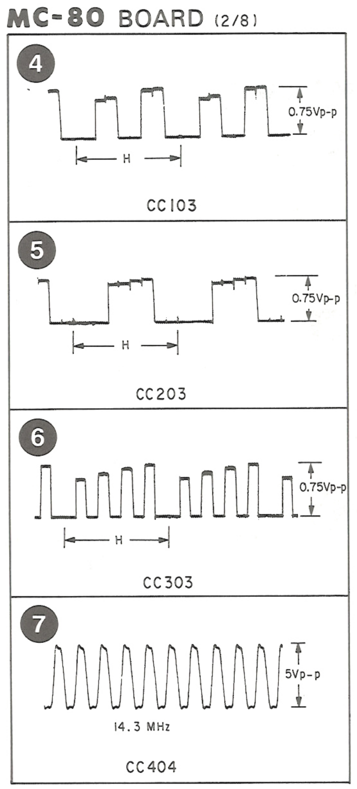
- **SIGNAL PATH (DIGITAL)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
WRITE	➡			
READ	⇨			

MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

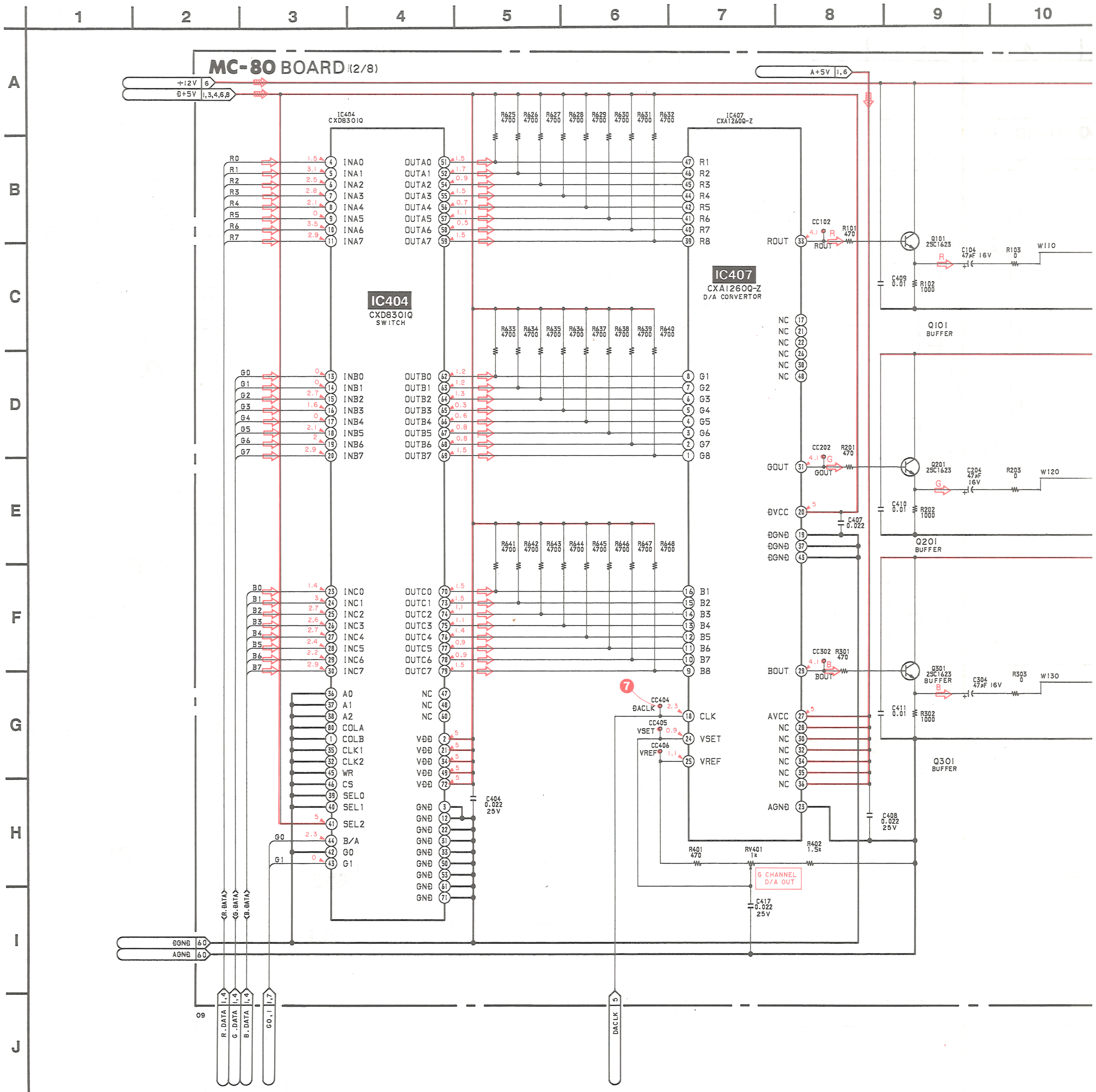
— Ref. No. MC-80 BOARD: 2000 series —

- **Refer to page 95 for Printed Wiring Board**

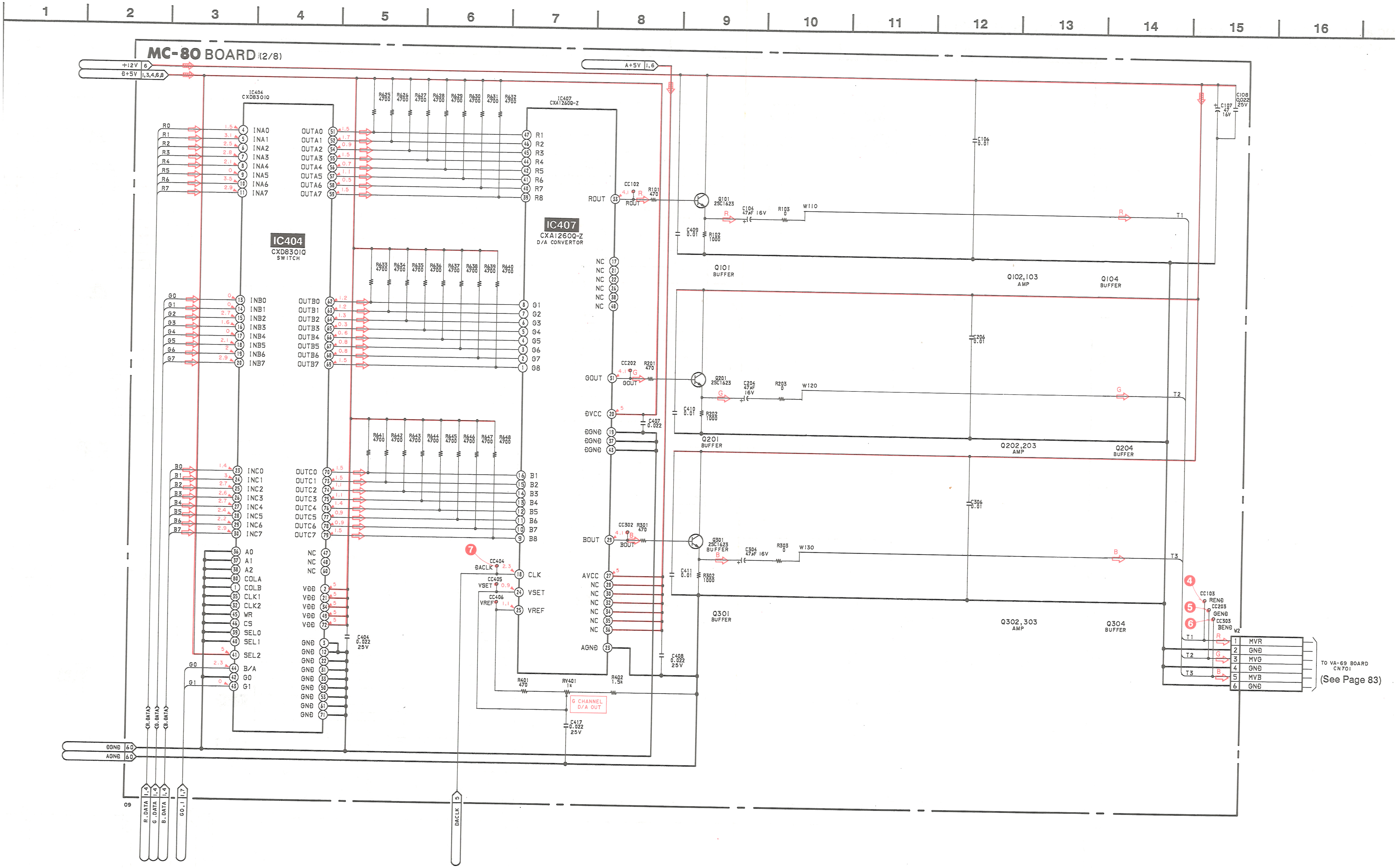


- **SIGNAL PATH (DIGITAL)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
WRITE				
READ	⇨			


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
MC-80 BOARD (2/8)
+12V 6
D+5V 1,3,4,6,8
A+5V 1,6
IC404 CXD8301Q
IC404
CXD8301Q
SWITCH
IC407 CXA1260Q-Z
IC407
CXA1260Q-Z
D/A CONVERTOR
R0
R1
R2
R3
R4
R5
R6
R7
G0
G1
G2
G3
G4
G5
G6
G7
B0
B1
B2
B3
B4
B5
B6
B7
INA0
INA1
INA2
INA3
INA4
INA5
INA6
INA7
INB0
INB1
INB2
INB3
INB4
INB5
INB6
INB7
INC0
INC1
INC2
INC3
INC4
INC5
INC6
INC7
A0
A1
A2
COLA
COLB
CLK1
CLK2
WR
CS
SEL0
SEL1
SEL2
B/A
G0
G1
OUTA0
OUTA1
OUTA2
OUTA3
OUTA4
OUTA5
OUTA6
OUTA7
OUTB0
OUTB1
OUTB2
OUTB3
OUTB4
OUTB5
OUTB6
OUTB7
OUTC0
OUTC1
OUTC2
OUTC3
OUTC4
OUTC5
OUTC6
OUTC7
NC
VDD
GND
C404 0.022 25V
R625 4700
R626 4700
R627 4700
R628 4700
R629 4700
R630 4700
R631 4700
R632 4700
R633 4700
R634 4700
R635 4700
R636 4700
R637 4700
R638 4700
R639 4700
R640 4700
R641 4700
R642 4700
R643 4700
R644 4700
R645 4700
R646 4700
R647 4700
R648 4700
R1
R2
R3
R4
R5
R6
R7
R8
G1
G2
G3
G4
G5
G6
G7
G8
B1
B2
B3
B4
B5
B6
B7
B8
CLK
VSET
VREF
BACLK
CC404
CC405
CC406
ROUT
GOUT
BOUT
DVCC
DGND
AVCC
AGND
NC
CC102
CC202
CC302
R101 470
R201 470
R301 470
C407 0.022
C408 0.022 25V
C409 0.01
C410 0.01
C411 0.01
R102 1000
R202 1000
R302 1000
Q101 2SC1623
Q201 2SC1623
Q301 2SC1623 BUFFER
Q101 BUFFER
Q201 BUFFER
Q301 BUFFER
C104 47µF 16V
C204 47µF 16V
C304 47µF 16V
R103 0
R203 0
R303 0
W110
W120
W130
R401 470
RV401 1k
R402 1.5k
G CHANNEL D/A OUT
C417 0.022 25V
DGND 60
AGND 60
09
R.DATA 1,4
G.DATA 1,4
B.DATA 1,4
GO.1 1,7
DACLK 5

MC-80 BOARD (2/8)

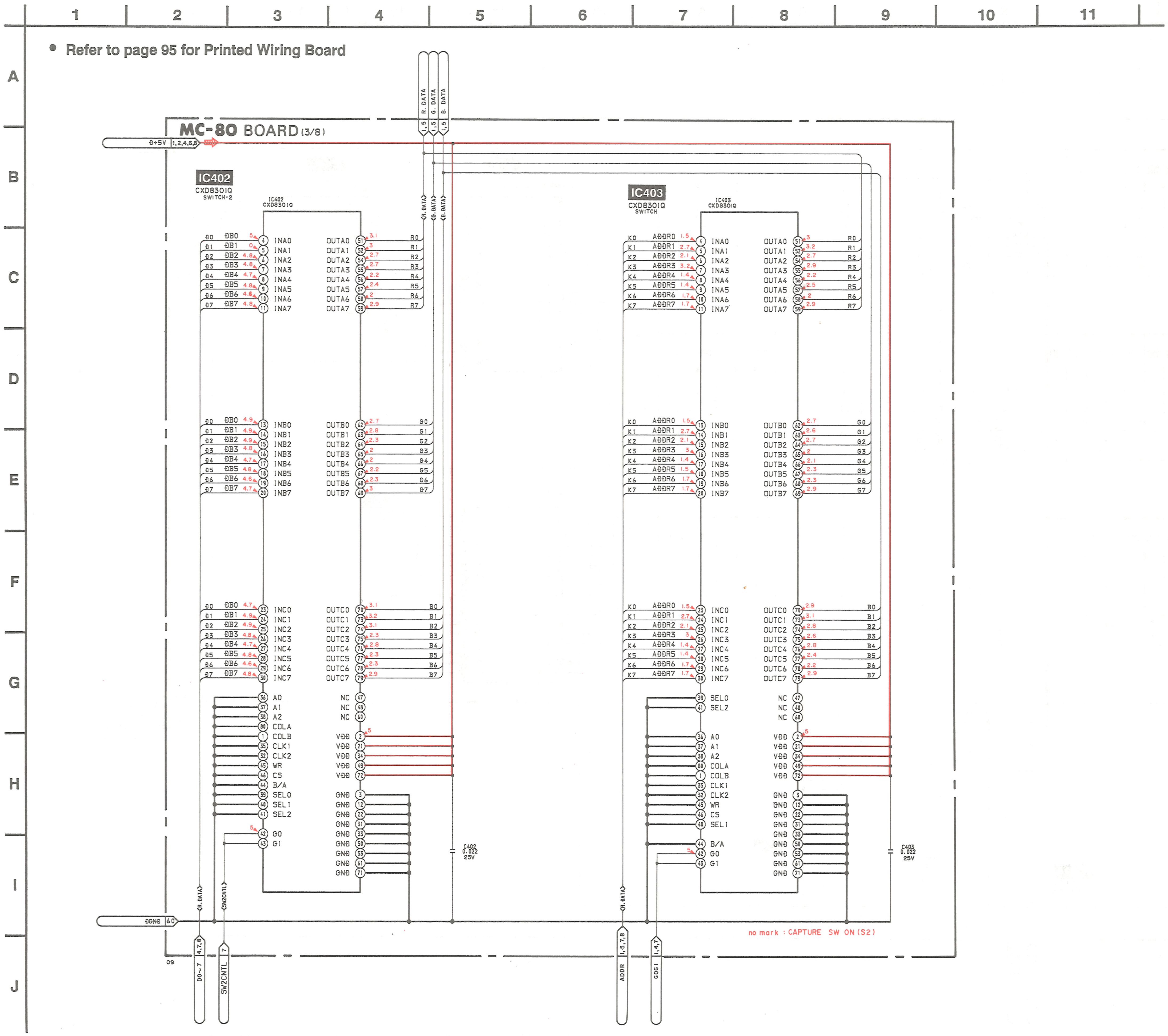

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
+12V 6
B+5V 1,3,4,6,8
A+5V 1,6
IC404
CXD8301Q
SWITCH
IC407
CXA1260Q-Z
D/A CONVERTOR
R0
R1
R2
R3
R4
R5
R6
R7
INA0
INA1
INA2
INA3
INA4
INA5
INA6
INA7
OUTA0
OUTA1
OUTA2
OUTA3
OUTA4
OUTA5
OUTA6
OUTA7
G0
G1
G2
G3
G4
G5
G6
G7
INB0
INB1
INB2
INB3
INB4
INB5
INB6
INB7
OUTB0
OUTB1
OUTB2
OUTB3
OUTB4
OUTB5
OUTB6
OUTB7
B0
B1
B2
B3
B4
B5
B6
B7
INC0
INC1
INC2
INC3
INC4
INC5
INC6
INC7
OUTC0
OUTC1
OUTC2
OUTC3
OUTC4
OUTC5
OUTC6
OUTC7
A0
A1
A2
COLA
COLB
CLK1
CLK2
WR
CS
SEL0
SEL1
SEL2
B/A
G0
G1
NC
VDD
GND
C404 0.022 25V
R625 4700
R626 4700
R627 4700
R628 4700
R629 4700
R630 4700
R631 4700
R632 4700
R633 4700
R634 4700
R635 4700
R636 4700
R637 4700
R638 4700
R639 4700
R640 4700
R641 4700
R642 4700
R643 4700
R644 4700
R645 4700
R646 4700
R647 4700
R648 4700
R1
R2
R3
R4
R5
R6
R7
R8
G1
G2
G3
G4
G5
G6
G7
G8
B1
B2
B3
B4
B5
B6
B7
B8
CLK
VSET
VREF
DACLK
CC404
CC405
CC406
ROUT
GOUT
BOUT
DVCC
DGND
AVCC
AGND
C407 0.022
C408 0.022 25V
R401 470
RV401 1k
R402 1.5k
G CHANNEL D/A OUT
C417 0.022 25V
CC102
R101 470
Q101 2SC1623
C104 47µF 16V
R103 0
W110
C409 0.01
R102 1000
Q101 BUFFER
Q102,103 AMP
Q104 BUFFER
C106 0.01
C107 47 16V
C108 0.022 25V
CC202
R201 470
Q201 2SC1623
C204 47µF 16V
R203 0
W120
C410 0.01
R202 1000
Q201 BUFFER
Q202,203 AMP
Q204 BUFFER
C206 0.01
CC302
R301 470
Q301 2SC1623 BUFFER
C304 47µF 16V
R303 0
W130
C411 0.01
R302 1000
Q301 BUFFER
Q302,303 AMP
Q304 BUFFER
C306 0.01
T1
T2
T3
4
5
6
7
CC103 REND
CC203 GEND
CC303 BEND
W2
1 MVR
2 GND
3 MVG
4 GND
5 MVB
6 GND
TO VA-69 BOARD CN701
(See Page 83)
DGND 60
AGND 60
R.DATA 1,4
G.DATA 1,4
B.DATA 1,4
G0,1 1,7
DACLK 5

VIDEO (DIGITAL) VIDEO (DIGITAL)

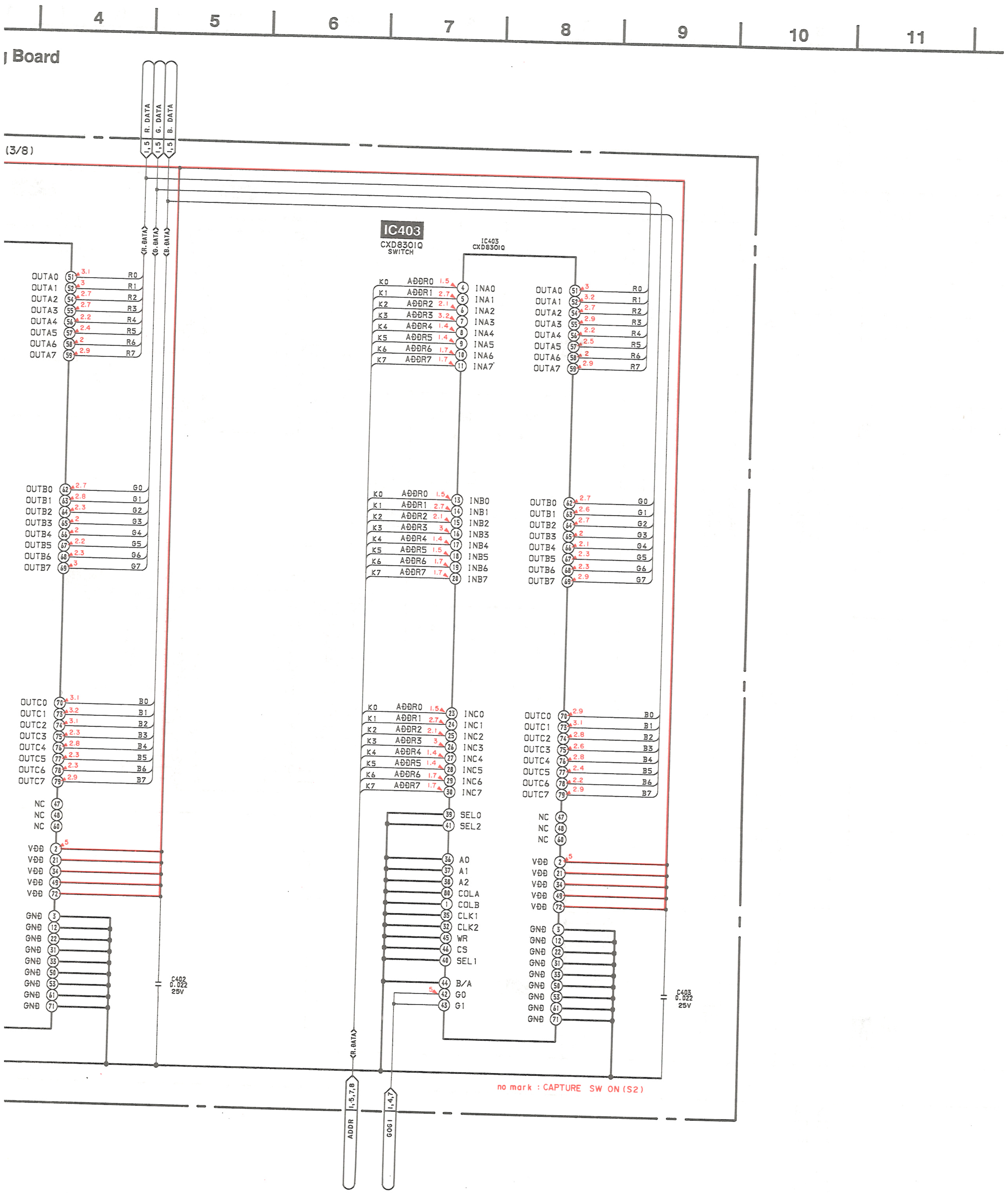
MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

— Ref. No. MC-80 BOARD: 2000 series —

- Refer to page 95 for Printed Wiring Board



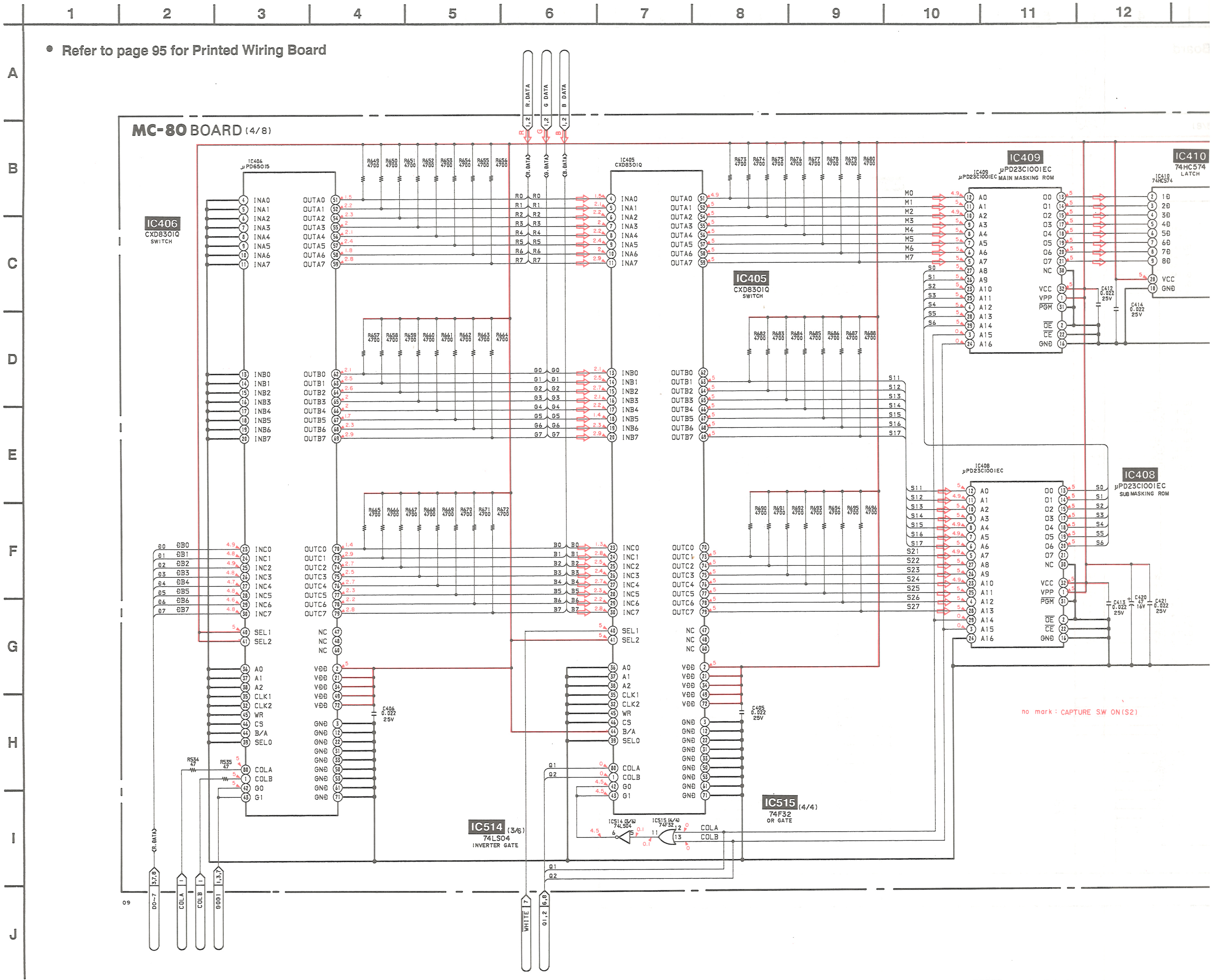
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
MC-80 BOARD (3/8)
R. DATA
G. DATA
B. DATA
1,5
⊕+5V
1,2,4,6,8
IC402
CXD8301Q
SWITCH-2
IC403
CXD8301Q
SWITCH
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
ADDR0
ADDR1
ADDR2
ADDR3
ADDR4
ADDR5
ADDR6
ADDR7
INA0
INA1
INA2
INA3
INA4
INA5
INA6
INA7
INB0
INB1
INB2
INB3
INB4
INB5
INB6
INB7
INC0
INC1
INC2
INC3
INC4
INC5
INC6
INC7
OUTA0
OUTA1
OUTA2
OUTA3
OUTA4
OUTA5
OUTA6
OUTA7
OUTB0
OUTB1
OUTB2
OUTB3
OUTB4
OUTB5
OUTB6
OUTB7
OUTC0
OUTC1
OUTC2
OUTC3
OUTC4
OUTC5
OUTC6
OUTC7
R0
R1
R2
R3
R4
R5
R6
R7
G0
G1
G2
G3
G4
G5
G6
G7
B0
B1
B2
B3
B4
B5
B6
B7
K0
K1
K2
K3
K4
K5
K6
K7
A0
A1
A2
COLA
COLB
CLK1
CLK2
WR
CS
B/A
SEL0
SEL1
SEL2
G0
G1
NC
VDD
GND
C402
0.022
25V
C403
0.022
25V
DGND
60
09
D0~7
4,7,8
SW2CNTL
7
ADDR
1,5,7,8
G0G1
1,4,7
no mark : CAPTURE SW ON (S2)


4
5
6
7
8
9
10
11
Board
(3/8)
R. DATA
G. DATA
B. DATA
IC403
CXD8301Q
SWITCH
OUTA0 OUTA1 OUTA2 OUTA3 OUTA4 OUTA5 OUTA6 OUTA7
R0 R1 R2 R3 R4 R5 R6 R7
OUTB0 OUTB1 OUTB2 OUTB3 OUTB4 OUTB5 OUTB6 OUTB7
G0 G1 G2 G3 G4 G5 G6 G7
OUTC0 OUTC1 OUTC2 OUTC3 OUTC4 OUTC5 OUTC6 OUTC7
B0 B1 B2 B3 B4 B5 B6 B7
K0 K1 K2 K3 K4 K5 K6 K7
ADDR0 ADDR1 ADDR2 ADDR3 ADDR4 ADDR5 ADDR6 ADDR7
INA0 INA1 INA2 INA3 INA4 INA5 INA6 INA7
INB0 INB1 INB2 INB3 INB4 INB5 INB6 INB7
INC0 INC1 INC2 INC3 INC4 INC5 INC6 INC7
SEL0 SEL2 A0 A1 A2 COLA COLB CLK1 CLK2 WR CS SEL1 B/A G0 G1
NC
VDD
GND
C402 0.022 25V
C403 0.022 25V
ADDR
G0G1
1,5,7,8
1,4,7
no mark : CAPTURE SW ON (S2)

MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

— Ref. No. MC-80 BOARD: 2000 series —

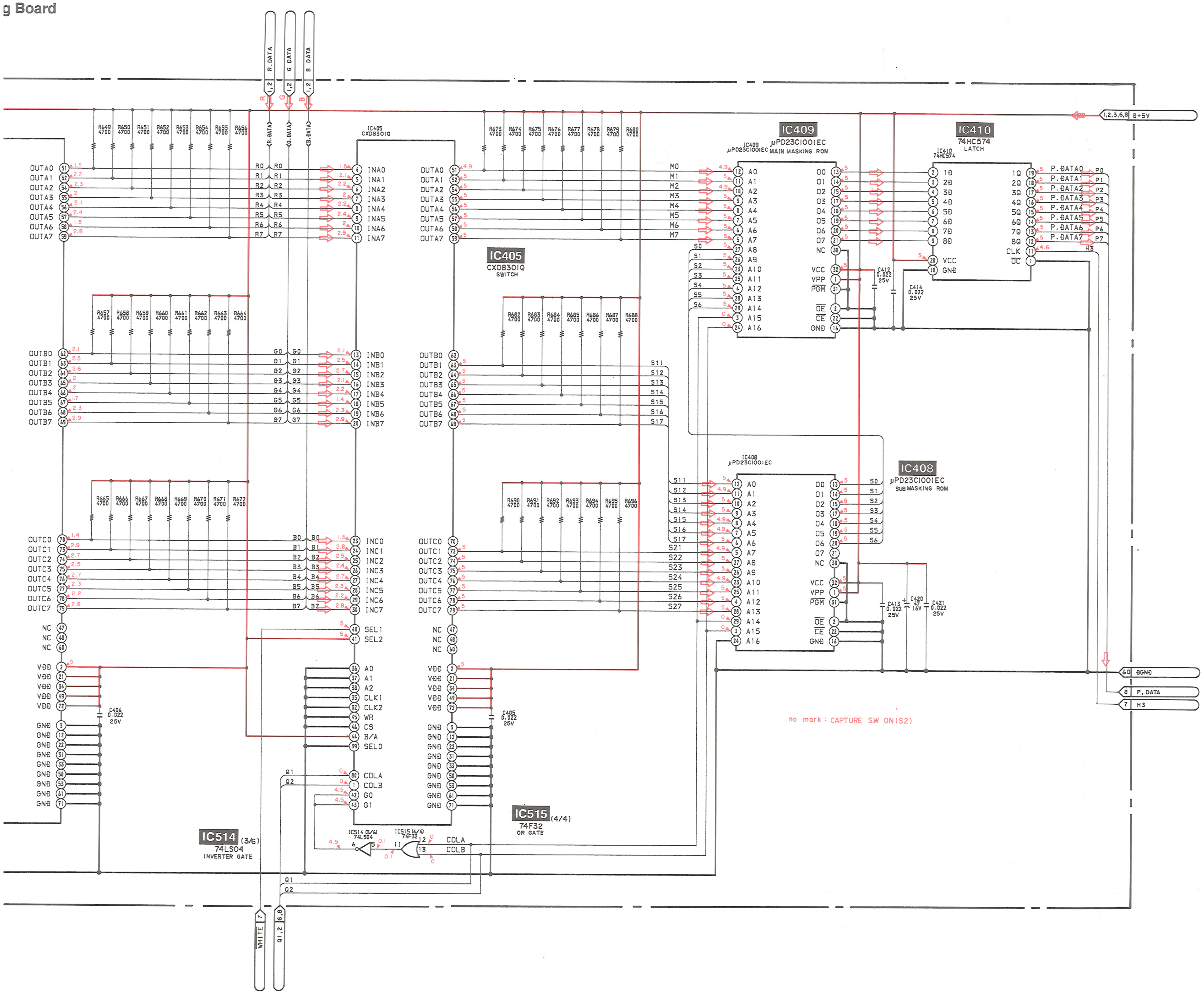
- Refer to page 95 for Printed Wiring Board


MC-80 BOARD (4/8)
IC406
CXD8301Q
SWITCH
IC405
CXD8301Q
SWITCH
IC409
μPD23C1001EC
MAIN MASKING ROM
IC410
74HC574
LATCH
IC408
μPD23C1001EC
SUB MASKING ROM
IC514 (3/6)
74LS04
INVERTER GATE
IC515 (4/4)
74F32
OR GATE
R.DATA
G DATA
B DATA
WHITE
O1,2
D0-7
COLA
COLB
OO01
no mark : CAPTURE SW ON (S2)
1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J

- SIGNAL PATH (DIGITAL)

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
WRITE				
READ	⇨			

g Board

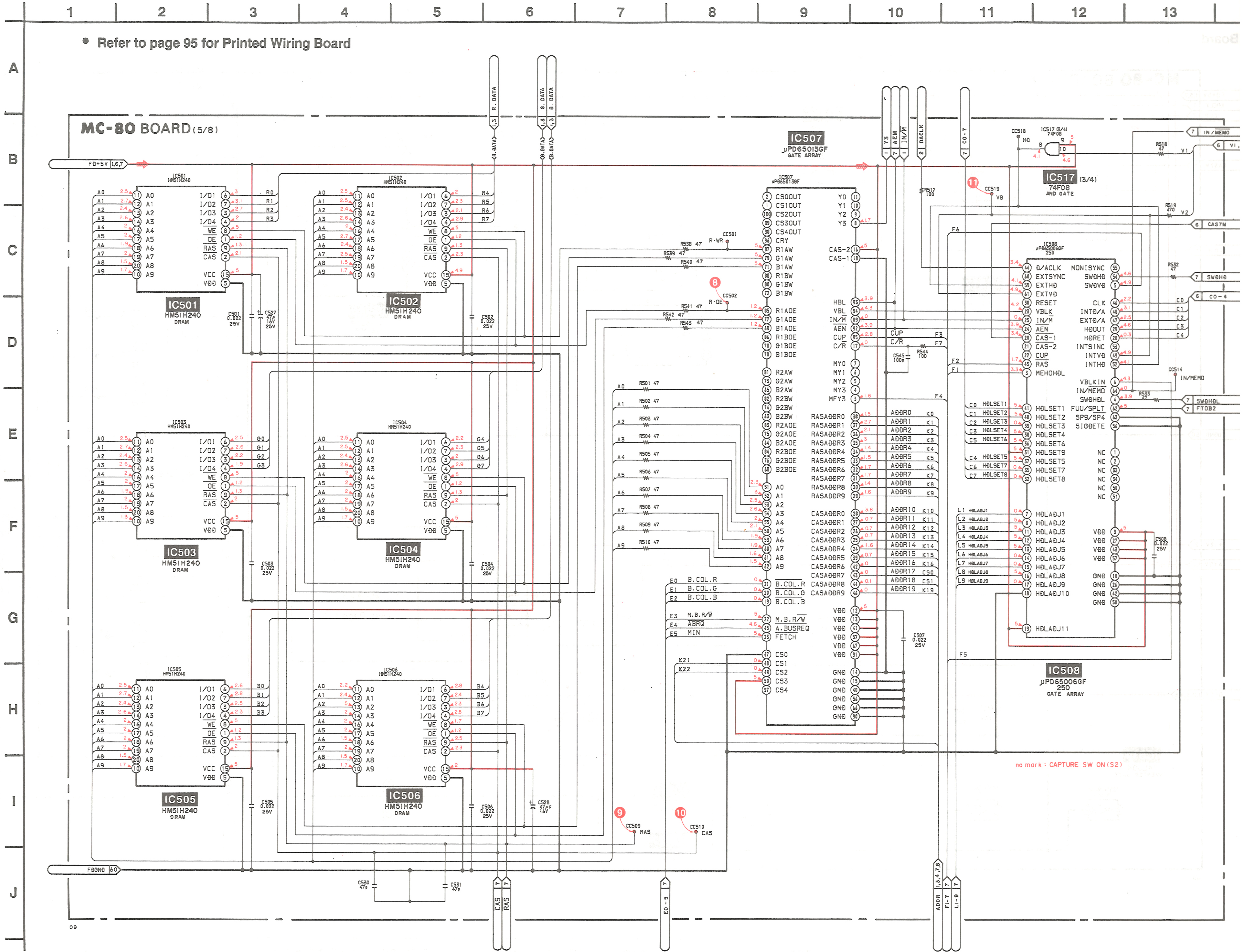

R. DATA
G. DATA
B. DATA
B+5V
IC405
CXD8301Q
SWITCH
IC409
μPD23C1001EC
MAIN MASKING ROM
IC410
74HC574
LATCH
IC408
μPD23C1001EC
SUB MASKING ROM
IC514 (3/6)
74LS04
INVERTER GATE
IC515 (4/4)
74F32
OR GATE
C406 0.022 25V
C405 0.022 25V
C412 0.022 25V
C414 0.022 25V
C413 0.022 25V
C420 47 16V
C421 0.022 25V
BGND
P. DATA
H3
WHITE
G1,2
COLA
COLB
no mark : CAPTURE SW ON(S2)

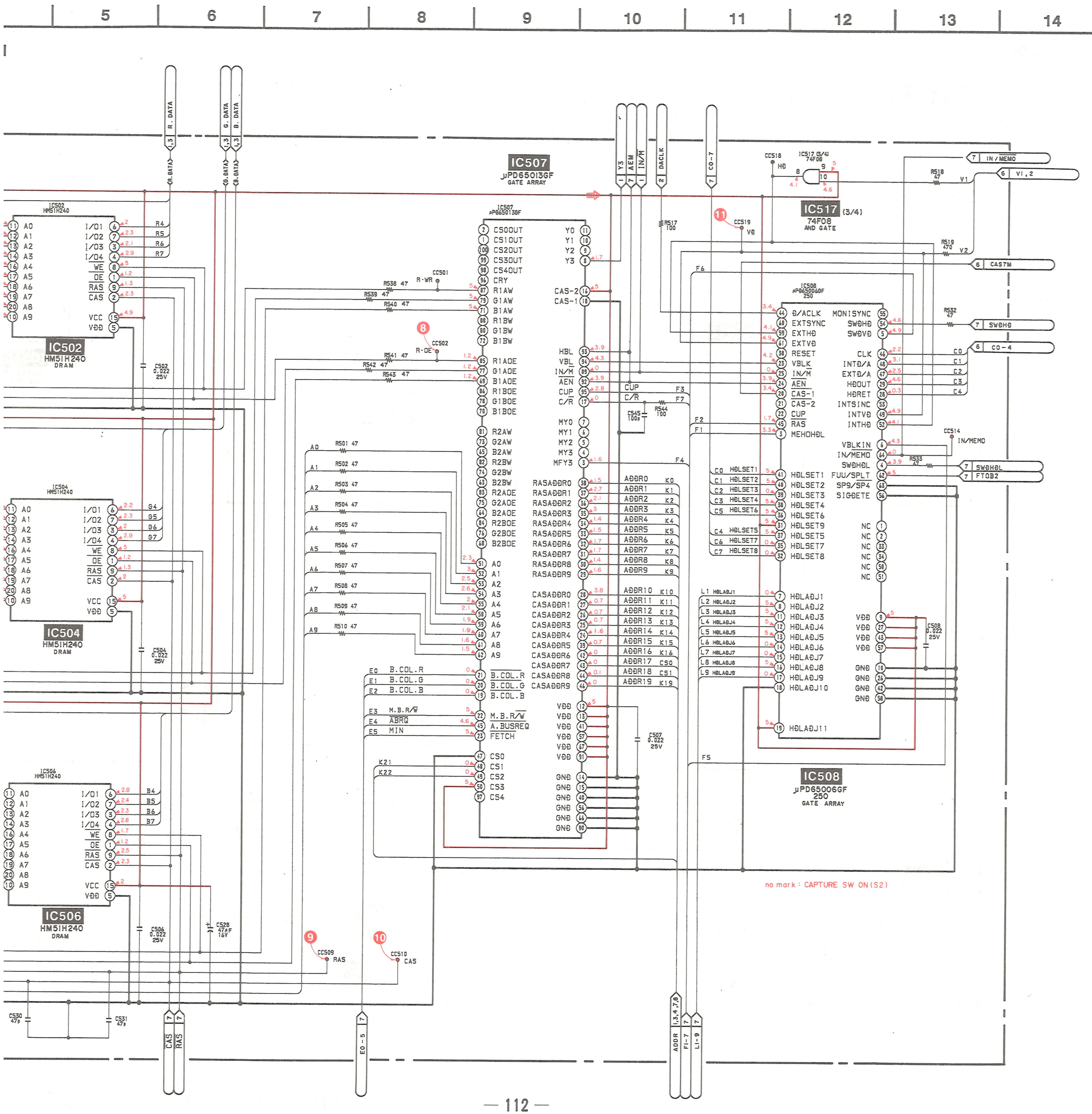
VIDEO (DIGITAL) VIDEO (DIGITAL)

MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

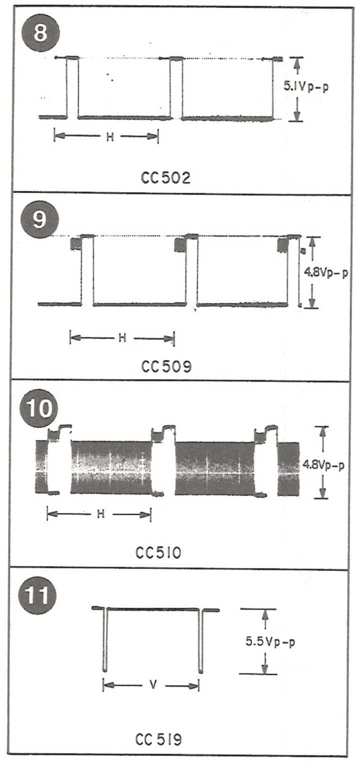
— Ref. No. MC-80 BOARD: 2000 series —

- Refer to page 95 for Printed Wiring Board


MC-80 BOARD (5/8)
IC501 HM51H240 DRAM
IC502 HM51H240 DRAM
IC503 HM51H240 DRAM
IC504 HM51H240 DRAM
IC505 HM51H240 DRAM
IC506 HM51H240 DRAM
IC507 μPD65013GF GATE ARRAY
IC508 μPD65006GF 250 GATE ARRAY
IC517 (3/4) 74F08 AND GATE
FD+5V
FDGND
R. DATA
G. DATA
B. DATA
CAS
RAS
E0 - 5
ADDR
FI-7
LI-9
Y3
AEM
IN/M
DACLK
CO-7
IN/MEMO
VI
CASTM
SW0H0
CO-4
SW0H0L
FT0B2
CC501 R-WR
CC502 R-DE
CC509 RAS
CC510 CAS
CC514
CC518 HD
CC519 VD
C501 0.022 25V
C502 0.022 25V
C503 0.022 25V
C504 0.022 25V
C505 0.022 25V
C506 0.022 25V
C507 0.022 25V
C508 0.022 25V
C527 47μ 16V
C528 47μF 16V
C530 47p
C531 47p
C545 100p
no mark : CAPTURE SW ON (S2)
09

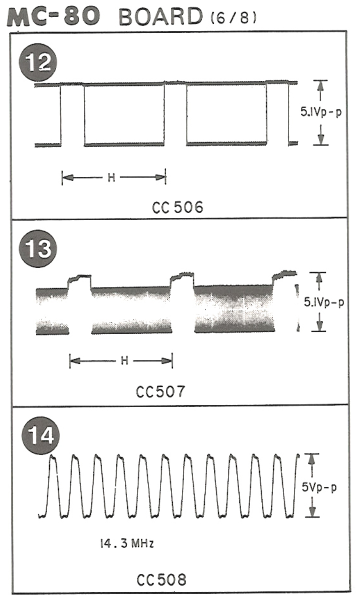

IC502
HM51H240
DRAM
IC504
HM51H240
DRAM
IC506
HM51H240
DRAM
IC507
μPD65013GF
GATE ARRAY
IC508
μPD65006GF
250
GATE ARRAY
IC517 (3/4)
74F08
AND GATE
R. DATA
G. DATA
B. DATA
Y3
AEM
IN/M
DACLK
C0-7
IN/MEMO
V1, 2
CAS7M
SWØHØ
C0-4
SWØHØL
FTOB2
CAS
RAS
E0-5
ADDR
F1-7
L1-9
CC501 R·WR
CC502 R·OE
CC509 RAS
CC510 CAS
CC514 IN/MEMO
CC518 HØ
CC519 VØ
C502 0.022 25V
C504 0.022 25V
C506 0.022 25V
C507 0.022 25V
C508 0.022 25V
C528 47μF 16V
C530 47p
C531 47p
C545 100p
no mark : CAPTURE SW ON (S2)

MC-80 BOARD (5/8)

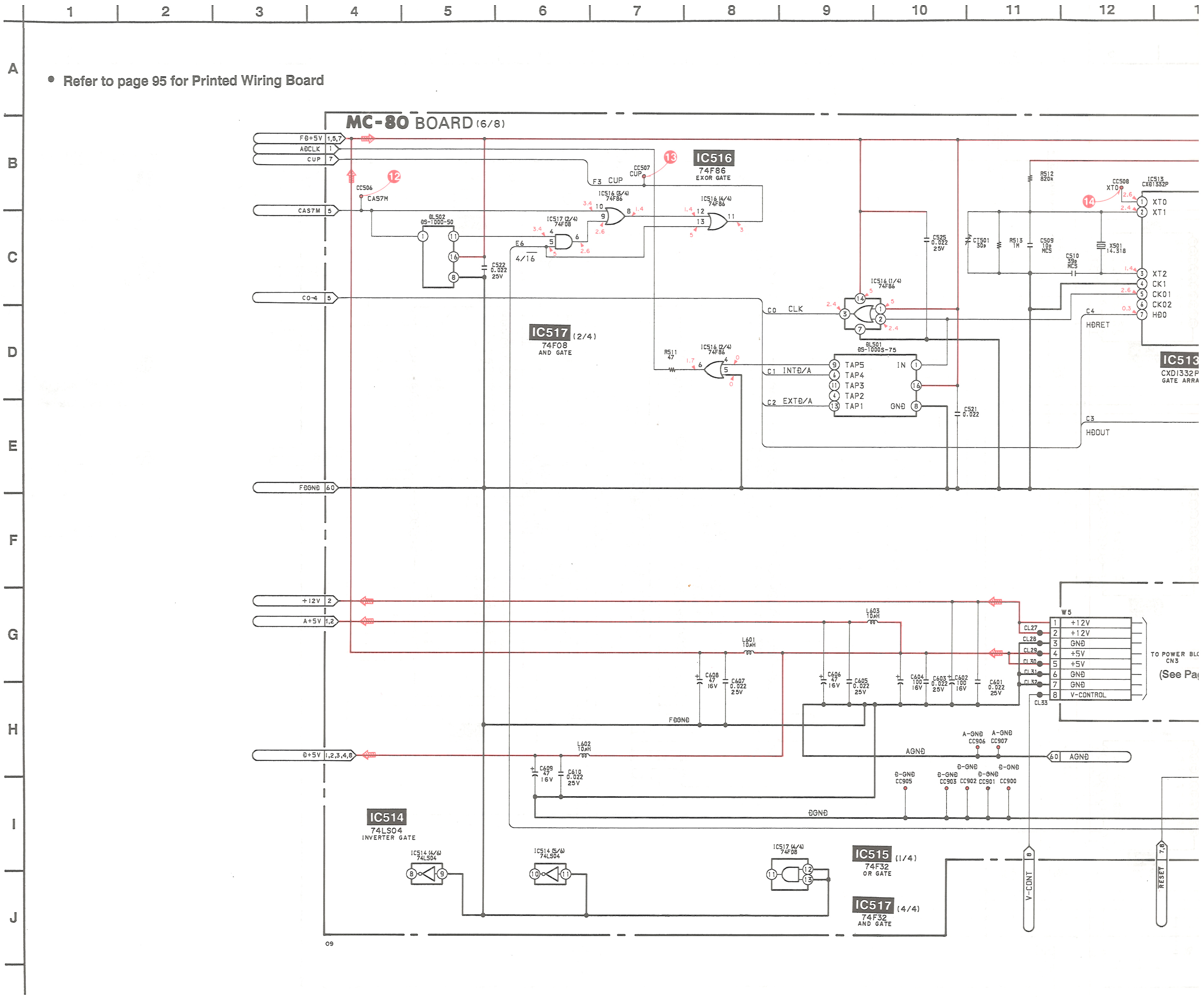

8
5.1Vp-p
H
CC502
9
4.8Vp-p
H
CC509
10
4.8Vp-p
H
CC510
11
5.5Vp-p
V
CC519

MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

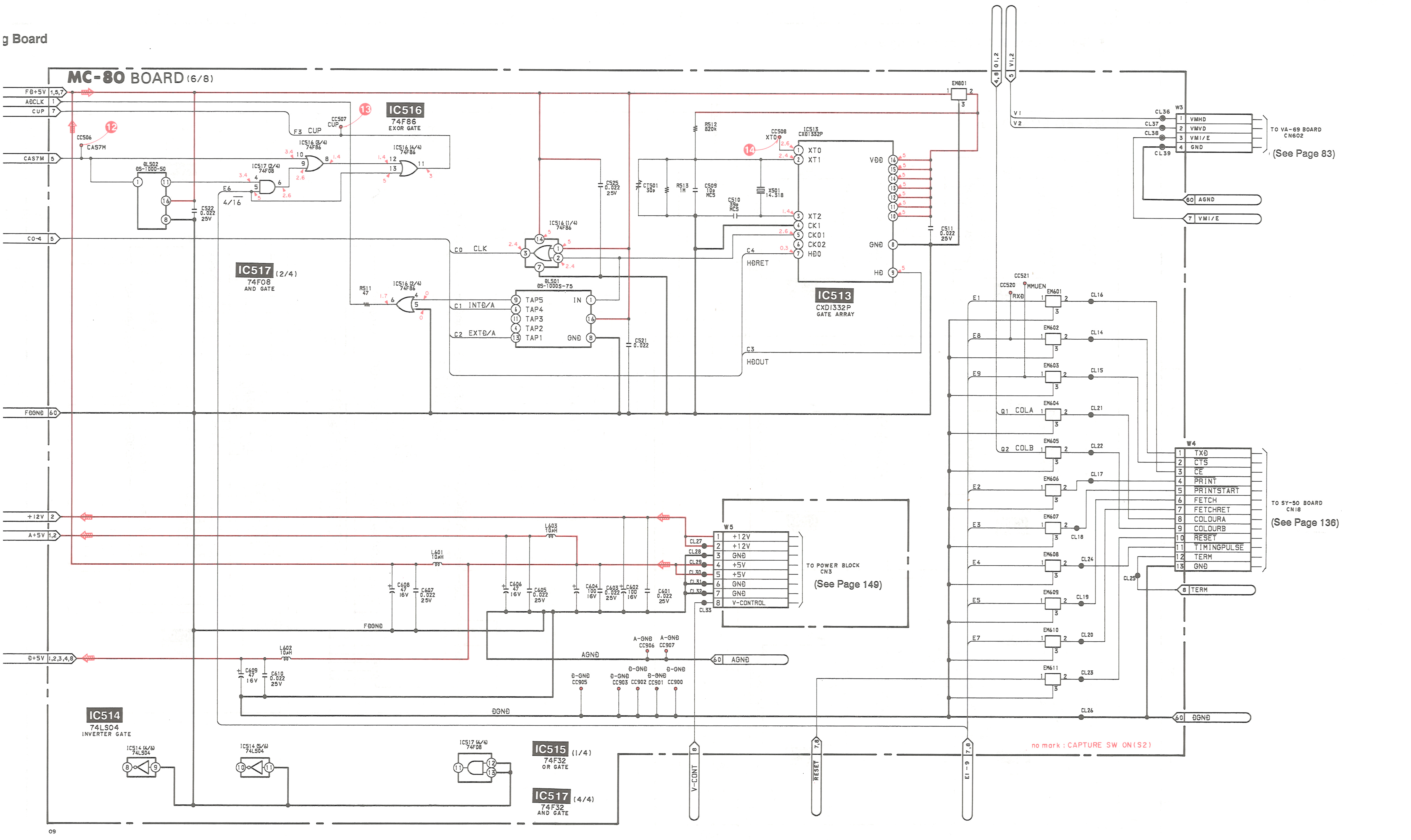
— Ref. No. MC-80 BOARD: 2000 series —



- Refer to page 95 for Printed Wiring Board


MC-80 BOARD (6/8)
FD+5V 1,5,7
ADCLK 1
CUP 7
CAS7M 5
CO-4 5
FDGND 60
+12V 2
A+5V 1,2
D+5V 1,2,3,4,8
CC506
CAS7M
DL502
DS-1000-50
IC517 (2/4) 74F08
IC516 (3/4) 74F86
IC516 (4/4) 74F86
C522 0.022 25V
E6
4/16
F3 CUP
CC507 CUP
IC516
74F86
EXOR GATE
IC517 (2/4)
74F08
AND GATE
R511 47
IC516 (2/4) 74F86
IC516 (1/4) 74F86
CO CLK
C1 INTD/A
C2 EXTD/A
DL501
DS-1000S-75
TAP5
TAP4
TAP3
TAP2
TAP1
IN
GND
C525 0.022 25V
C521 0.022
CT501 30p
R513 1M
C509 10p MCS
C510 39p MCS
X501 14.318
R512 820k
CC508 XTO
IC513 CXD1332P
XTO
XT1
XT2
CK1
CKO1
CKO2
HDO
C4 HDRET
C3 HDOUT
IC513
CXD1332P
GATE ARRA
L603 10μH
L601 10μH
L602 10μH
C608 47 16V
C607 0.022 25V
C606 47 16V
C605 0.022 25V
C604 100 16V
C603 0.022 25V
C602 100 16V
C601 0.022 25V
C609 47 16V
C610 0.022 25V
FDGND
W5
+12V
+12V
GND
+5V
+5V
GND
GND
V-CONTROL
CL27
CL28
CL29
CL30
CL31
CL32
CL33
TO POWER BLC
CN3
(See Pag
A-GND CC906
A-GND CC907
AGND
60 AGND
D-GND CC905
D-GND CC903
CC902
D-GND CC901
D-GND CC900
DGND
IC514
74LS04
INVERTER GATE
IC514 (4/6) 74LS04
IC514 (5/6) 74LS04
IC517 (4/4) 74F08
IC515 (1/4)
74F32
OR GATE
IC517 (4/4)
74F32
AND GATE
V-CONT
RESET
09

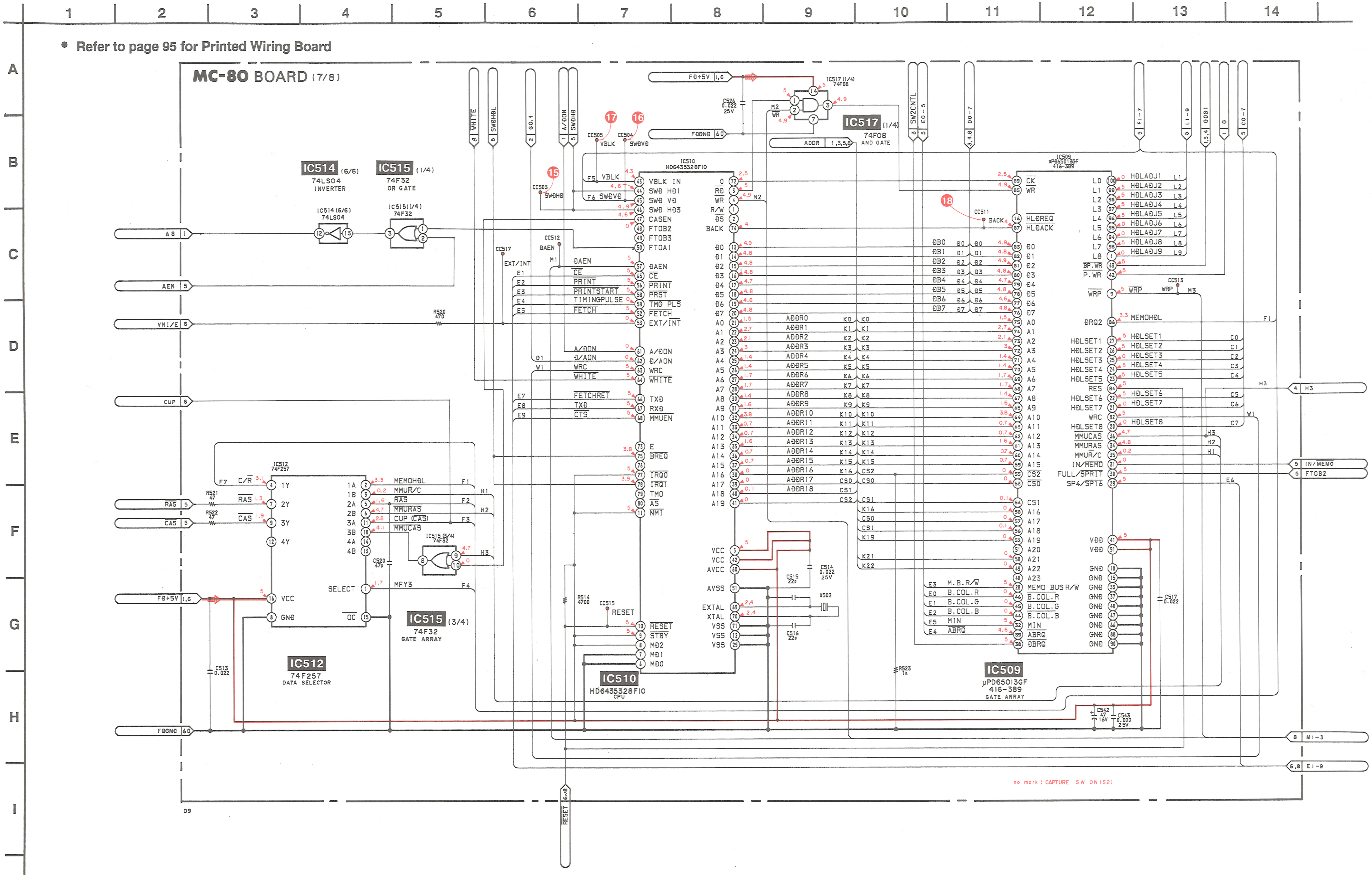
g Board


MC-80 BOARD (6/8)
FD+5V 1,5,7
ADCLK 1
CUP 7
CAS7M 5
CO-4 5
FDGND 60
+12V 2
A+5V 1,2
D+5V 1,2,3,4,8
IC516
74F86
EXOR GATE
IC517 (2/4)
74F08
AND GATE
IC513
CXD1332P
GATE ARRAY
IC514
74LS04
INVERTER GATE
IC515 (1/4)
74F32
OR GATE
IC517 (4/4)
74F32
AND GATE
CC506
CAS7M
CC507
CUP
F3 CUP
IC516 (3/4)
IC516 (4/4)
IC517 (2/4)
DL502
DS-1000-50
E6
4/16
C522
0.022
25V
C525
0.022
25V
IC516 (1/4)
74F86
C0 CLK
R511
47
IC516 (2/4)
74F86
DL501
DS-1000S-75
C1 INTD/A
C2 EXTD/A
TAP5
TAP4
TAP3
TAP2
TAP1
IN
GND
C521
0.022
R512
820k
CC508
XTO
CT501
30p
R513
1M
C509
10p
MCS
C510
39p
MCS
X501
14.318
XTO
XT1
XT2
CK1
CK01
CK02
HDO
VDD
GND
HD
C4
HDRET
C3
HDOUT
C511
0.022
25V
EM801
V1
V2
W3
CL36
CL37
CL38
CL39
VMHD
VMVD
VMI/E
GND
TO VA-69 BOARD
CN602
(See Page 83)
60 AGND
7 VMI/E
CC521
CC520
MMUEN
RXD
E1
E8
E9
Q1 COLA
Q2 COLB
E2
E3
E4
E5
E7
EM601
EM602
EM603
EM604
EM605
EM606
EM607
EM608
EM609
EM610
EM611
CL16
CL14
CL15
CL21
CL22
CL17
CL18
CL24
CL25
CL19
CL20
CL23
CL26
W4
TXD
CTS
CE
PRINT
PRINTSTART
FETCH
FETCHRET
COLOURA
COLOURB
RESET
TIMINGPULSE
TERM
GND
TO SY-50 BOARD
CN18
(See Page 136)
8 TERM
60 DGND
W5
+12V
+12V
GND
+5V
+5V
GND
GND
V-CONTROL
CL27
CL28
CL29
CL30
CL31
CL32
CL33
TO POWER BLOCK
CN3
(See Page 149)
L603
10μH
L601
10μH
L602
10μH
C608
47
16V
C607
0.022
25V
C606
47
16V
C605
0.022
25V
C604
100
16V
C603
0.022
25V
C602
100
16V
C601
0.022
25V
C609
47
16V
C610
0.022
25V
FDGND
AGND
60 AGND
A-GND
CC906
A-GND
CC907
D-GND
CC905
D-GND
CC903
D-GND
CC902
D-GND
CC901
D-GND
CC900
DGND
IC514 (4/6)
74LS04
IC514 (5/6)
74LS04
IC517 (4/4)
74F08
V-CONT
RESET
EI-9
4,8 D1,2
5 V1,2
no mark : CAPTURE SW ON (S2)
09

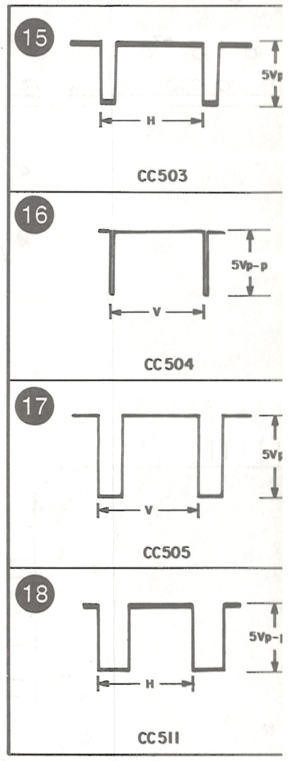
MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

— Ref. No. MC-80 BOARD: 2000 series —

- Refer to page 95 for Printed Wiring Board


MC-80 BOARD (7/8)
IC514 (6/6) 74LS04 INVERTER
IC515 (1/4) 74F32 OR GATE
IC517 (1/4) 74F08 AND GATE
IC510 HD6435328F10 CPU
IC509 μPD65013GF 416-389 GATE ARRAY
IC512 74F257 DATA SELECTOR
IC515 (3/4) 74F32 GATE ARRAY
A8
AEN
VMI/E
CUP
RAS
CAS
F0+5V
FGND
WHITE
SWDHDL
GO.1
A/DON
SWDHD
SW2CNTL
EO-5
DO-7
FI-7
LI-9
GOGI
CO-7
ADDR
H3
IN/MEMO
FTOB2
MI-3
EI-9
RESET
VBLK IN
SWD HD1
SWD VD
SWD HD3
CASEN
FTOB2
FTOB3
FTOAI
DAEN
CE
PRINT
PRST
TMG PLS
FETCH
EXT/INT
A/DON
D/AON
WRC
WHITE
TXD
RXD
MMUEN
BREQ
TRQ0
TRQ1
TMO
AS
NMI
STBY
MD2
MD1
MD0
VCC
AVCC
AVSS
EXTAL
XTAL
VSS
CK
WR
HLDREQ
HLDACK
HDLADJ1–HDLADJ9
BP.WR
P.WR
WRP
MEMOHDL
HDLSET1–HDLSET8
RES
MMUCAS
MMURAS
MMUR/C
IN/MEMO
FULL/SPRIT
SP4/SP16
VDD
GND
MEMO BUS R/W
B.COL.R
B.COL.G
B.COL.B
MIN
ABRQ
DBRQ
MEMOHDL
MMUR/C
MMURAS
CUP (CAS)
MMUCAS
MFY3
SELECT
OC
CC503
CC504
CC505
CC511
CC512
CC513
CC515
CC517
X502
no mark : CAPTURE SW ON (S2)
09

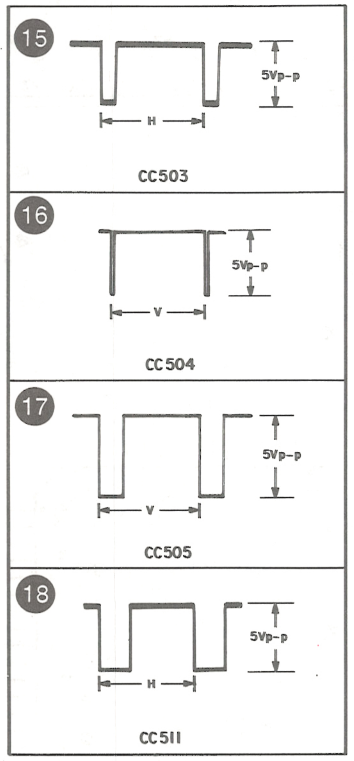
MC-80 BOARD (7/8)


15
5Vp
H
CC503
16
5Vp-p
V
CC504
17
5Vp
V
CC505
18
5Vp-
H
CC511

MC-80 (VIDEO (DIGITAL)) SCHEMATIC DIAGRAM

— Ref. No. MC-80 BOARD: 2000 series —

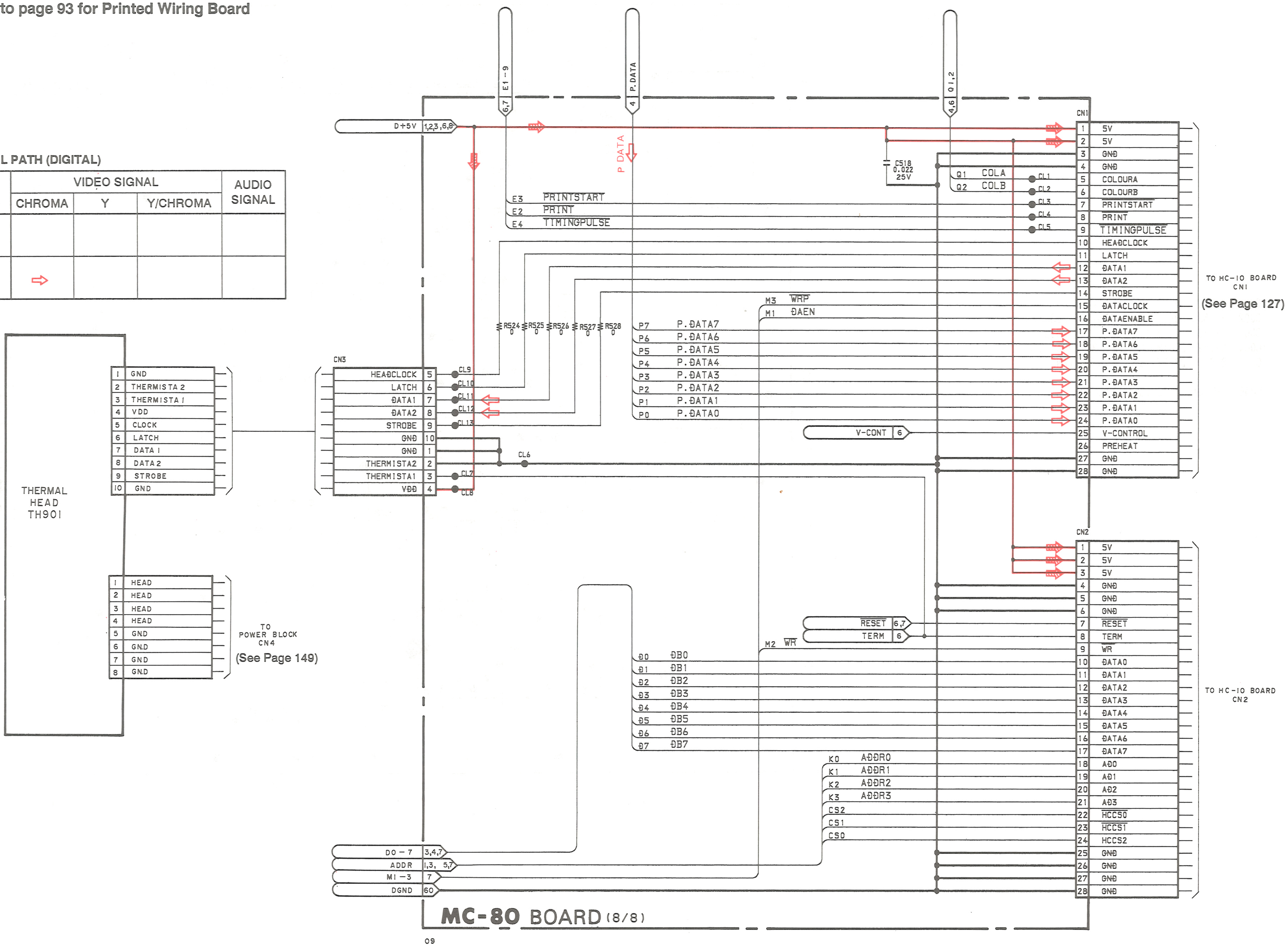
MC-80 BOARD (7/8)


15
5Vp-p
H
CC503
16
5Vp-p
V
CC504
17
5Vp-p
V
CC505
18
5Vp-p
H
CC511

- Refer to page 93 for Printed Wiring Board

- SIGNAL PATH (DIGITAL)

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
WRITE				
READ	⇨			


THERMAL HEAD TH901
1 GND
2 THERMISTA 2
3 THERMISTA 1
4 VDD
5 CLOCK
6 LATCH
7 DATA 1
8 DATA 2
9 STROBE
10 GND
1 HEAD
2 HEAD
3 HEAD
4 HEAD
5 GND
6 GND
7 GND
8 GND
TO POWER BLOCK CN4
(See Page 149)
CN3
HEADCLOCK 5
LATCH 6
DATA1 7
DATA2 8
STROBE 9
GND 10
GND 1
THERMISTA2 2
THERMISTA1 3
VDD 4
CL9
CL10
CL11
CL12
CL13
CL6
CL7
CL8
D+5V 1,2,3,6,8
6,7 E1 – 9
4 P. DATA
4,6 Q1,2
P DATA
R524 0
R525 0
R526 0
R527 0
R528 0
E3 PRINTSTART
E2 PRINT
E4 TIMINGPULSE
C518 0.022 25V
Q1 COLA
Q2 COLB
CL1
CL2
CL3
CL4
CL5
M3 WRP
M1 DAEN
P7 P.DATA7
P6 P.DATA6
P5 P.DATA5
P4 P.DATA4
P3 P.DATA3
P2 P.DATA2
P1 P.DATA1
P0 P.DATA0
V-CONT 6
CN1
1 5V
2 5V
3 GND
4 GND
5 COLOURA
6 COLOURB
7 PRINTSTART
8 PRINT
9 TIMINGPULSE
10 HEADCLOCK
11 LATCH
12 DATA1
13 DATA2
14 STROBE
15 DATACLOCK
16 DATAENABLE
17 P.DATA7
18 P.DATA6
19 P.DATA5
20 P.DATA4
21 P.DATA3
22 P.DATA2
23 P.DATA1
24 P.DATA0
25 V-CONTROL
26 PREHEAT
27 GND
28 GND
TO HC-10 BOARD CN1
(See Page 127)
RESET 6,7
TERM 6
M2 WR
D0 DB0
D1 DB1
D2 DB2
D3 DB3
D4 DB4
D5 DB5
D6 DB6
D7 DB7
K0 ADDR0
K1 ADDR1
K2 ADDR2
K3 ADDR3
CS2
CS1
CS0
CN2
1 5V
2 5V
3 5V
4 GND
5 GND
6 GND
7 RESET
8 TERM
9 WR
10 DATA0
11 DATA1
12 DATA2
13 DATA3
14 DATA4
15 DATA5
16 DATA6
17 DATA7
18 AD0
19 AD1
20 AD2
21 AD3
22 HCCS0
23 HCCS1
24 HCCS2
25 GND
26 GND
27 GND
28 GND
TO HC-10 BOARD CN2
D0 – 7 3,4,7
ADDR 1,3,5,7
M1 – 3 7
DGND 60
MC-80 BOARD (8/8)
09

HC-10 (THERMAL HEAD CONTROL) PRINTED WIRING BOARD

— Ref. No. HC-10 BOARD: 3000 series —

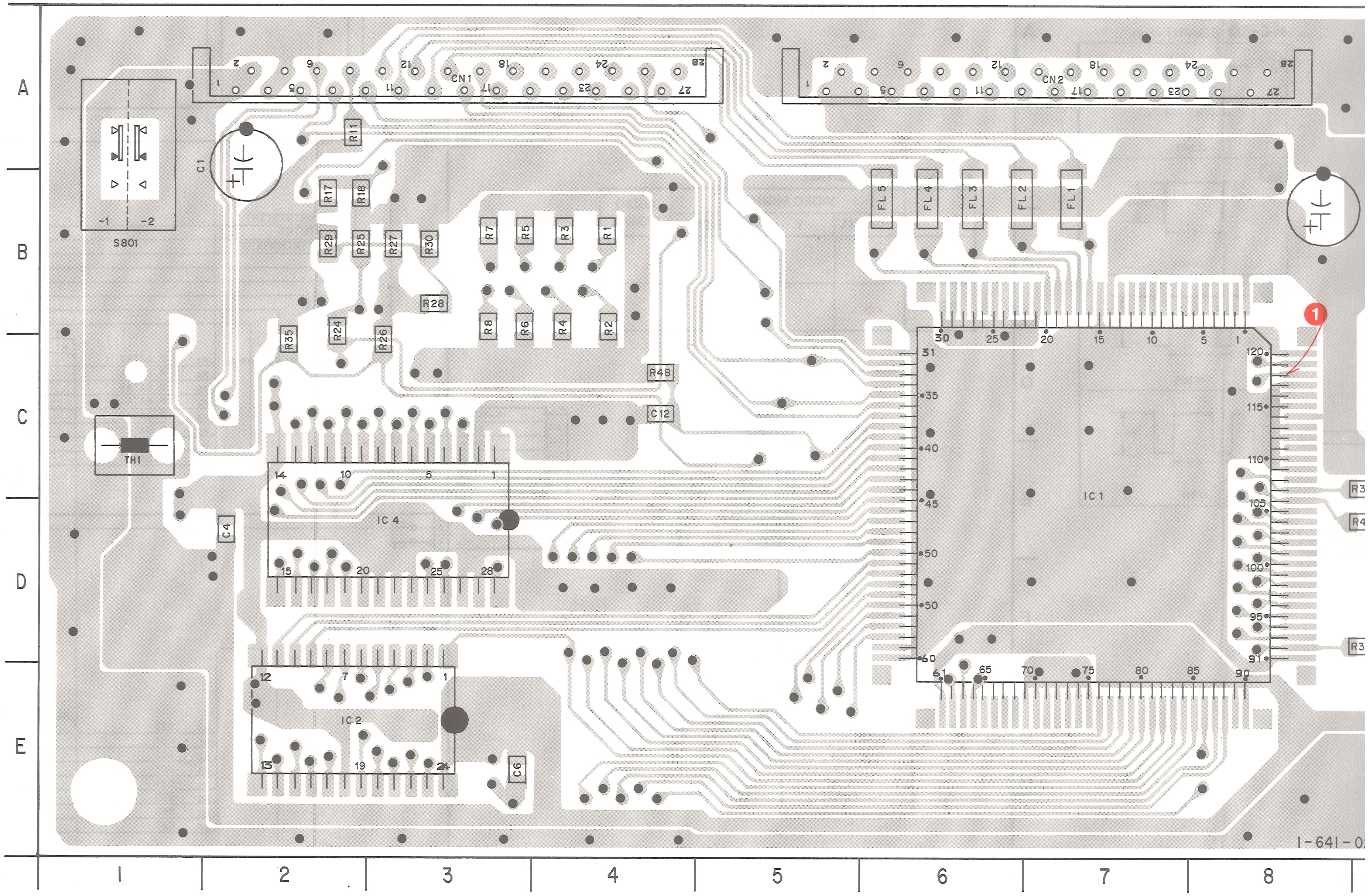
HC-10 BOARD

CN001	A-3
CN002	A-6
IC001	C-7
IC002	E-2
IC003	E-14
IC004	D-3
IC005	B-15
IC006	B-16

〈 IC 〉

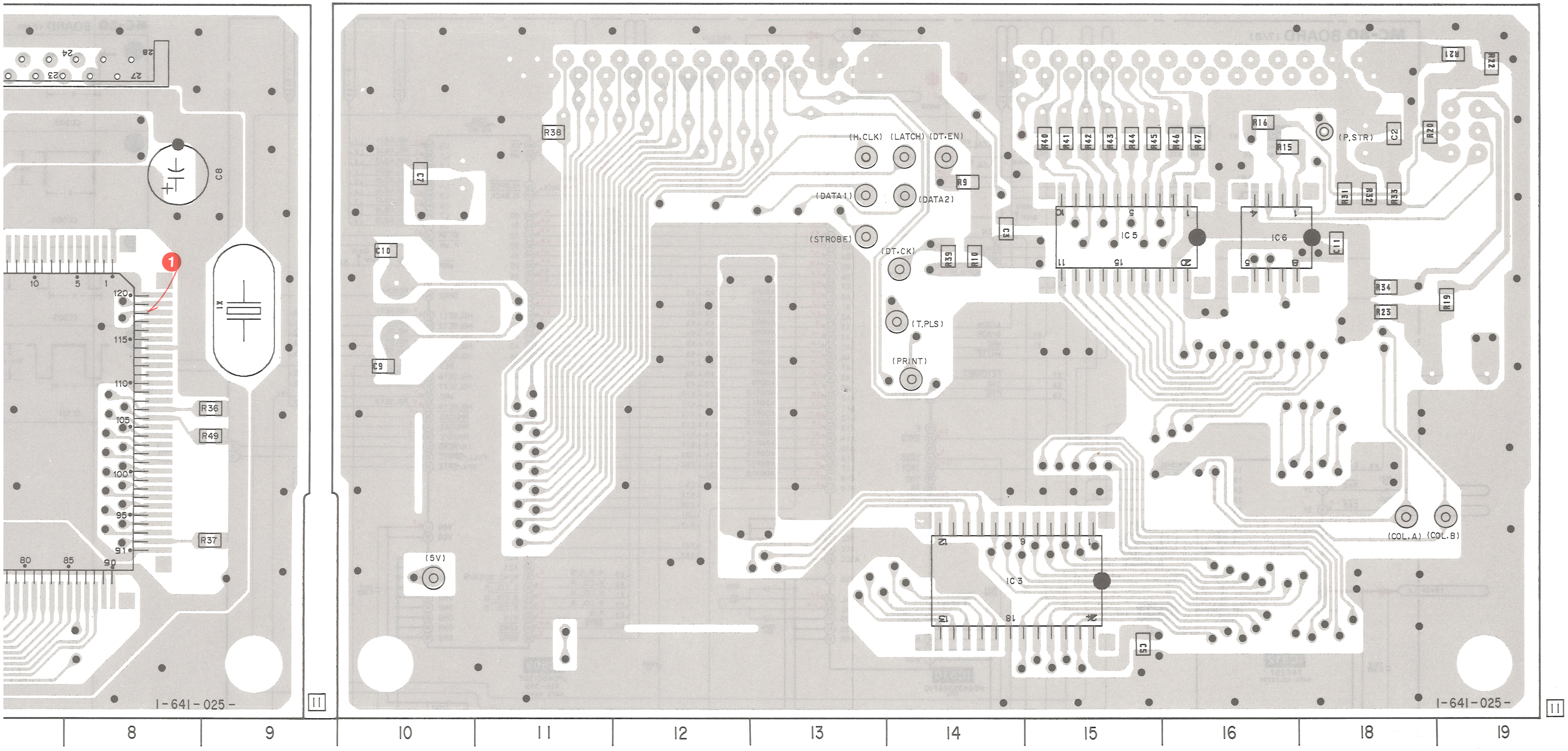
IC001	8-759-154-84	IC	HDC443V2
IC002	8-759-053-58	IC	IDT6116SA25S0
IC003	8-759-053-58	IC	IDT6116SA25S0
IC004	8-759-062-13	IC	uPD23C1000AG-360
IC005	8-759-926-77	IC	SN74HC541ANS
IC006	8-759-983-69	IC	LM358PS

HC-10 BOARD (COMPONENT SIDE)



A
B
C
D
E
1
2
3
4
5
6
7
8
CN1
CN2
S801
-1
-2
C1
TH1
C4
C6
C12
R1
R2
R3
R4
R5
R6
R7
R8
R11
R17
R18
R24
R25
R26
R27
R28
R29
R30
R35
R48
FL1
FL2
FL3
FL4
FL5
IC1
IC2
IC4
1
I-641-0

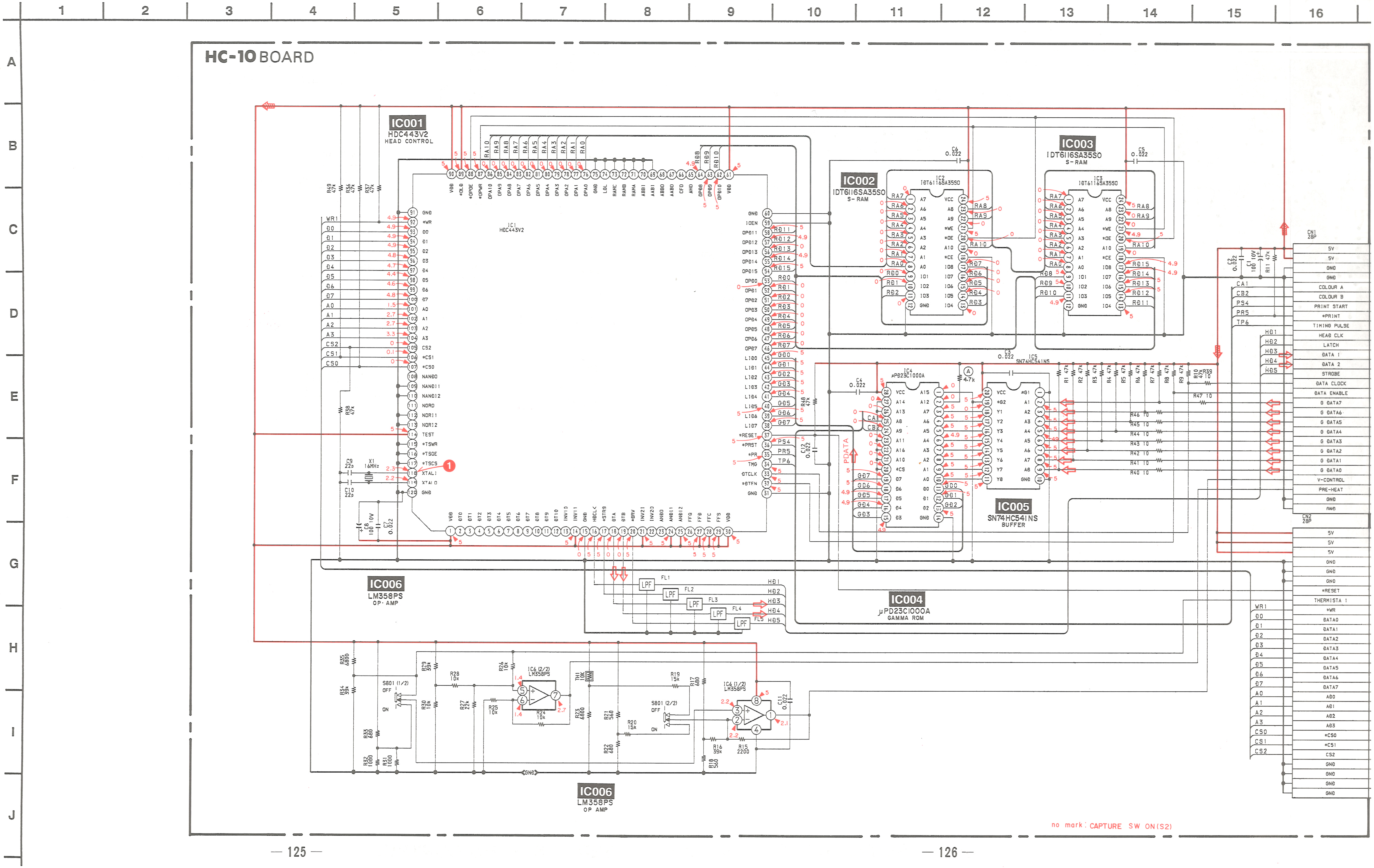
HC-10 BOARD (CONDUCTOR SIDE)



C8
X1
①
120
115
110
105
100
95
91
90
85
80
10
5
1
23
24
27
28
R36
R49
R37
1-641-025-
11
R38
C7
C10
C9
(5V)
(H.CLK)
(LATCH)
(DT.EN)
(DATA1)
(DATA2)
(STROBE)
(DT.CK)
(T.PLS)
(PRINT)
R9
R39
R10
C3
R40
R41
R42
R43
R44
R45
R46
R47
IC5
R16
R15
(P.STR)
C2
R20
R21
R22
R31
R32
R33
IC6
C11
R34
R23
R19
IC3
C5
(COL.A)
(COL.B)
1-641-025-
11
8
9
10
11
12
13
14
15
16
18
19

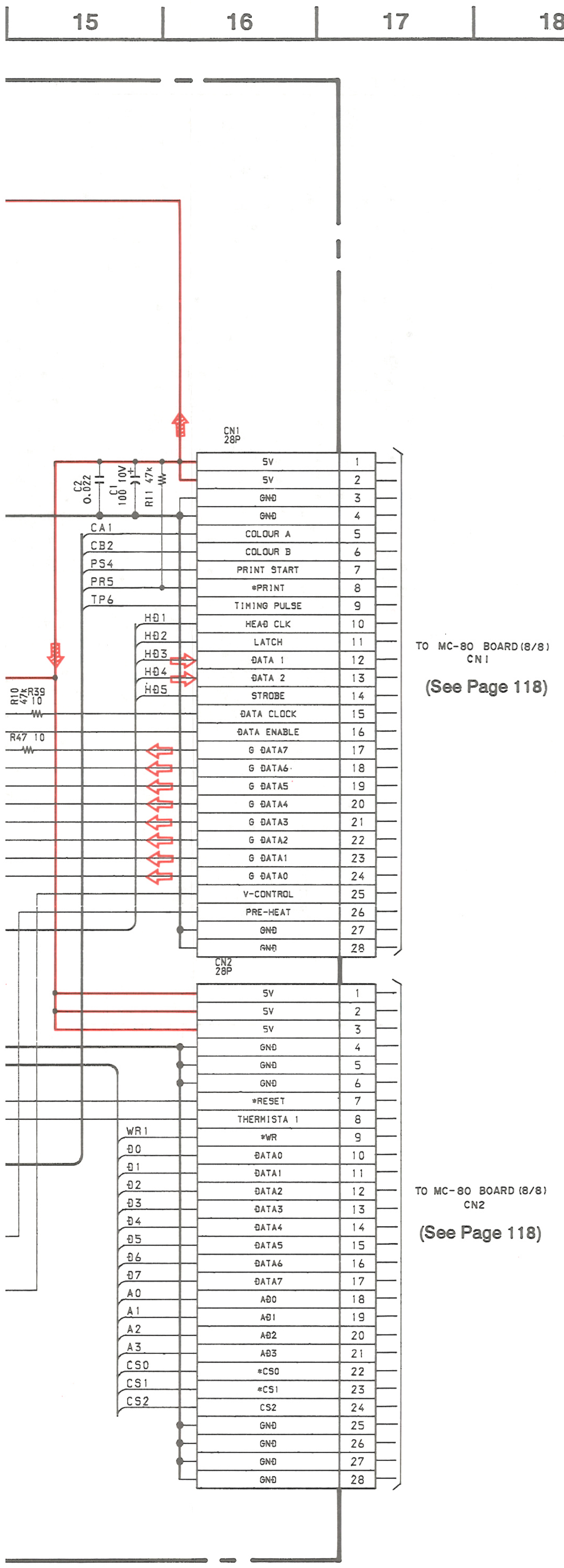
HC-10 (THERMAL HEAD CONTROL) SCHEMATIC DIAGRAM

— Ref. No. HC-10 BOARD: 3000 series —

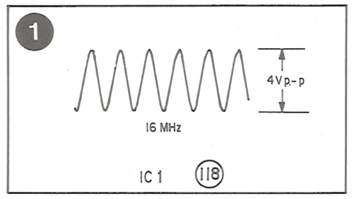


HC-10 BOARD
IC001
HDC443V2
HEAD CONTROL
IC002
IDT6116SA35SO
S-RAM
IC003
IDT6116SA35SO
S-RAM
IC004
μPD23C1000A
GAMMA ROM
IC005
SN74HC541NS
BUFFER
IC006
LM358PS
OP-AMP
X1 16MHz
S801 (1/2)
S801 (2/2)
TH1 10k
LPF
FL1
FL2
FL3
FL4
FL5
HD1
HD2
HD3
HD4
HD5
PDATA
CN1 28P
5V
5V
GND
GND
COLOUR A
COLOUR B
PRINT START
*PRINT
TIMING PULSE
HEAD CLK
LATCH
DATA 1
DATA 2
STROBE
DATA CLOCK
DATA ENABLE
G DATA7
G DATA6
G DATA5
G DATA4
G DATA3
G DATA2
G DATA1
G DATA0
V-CONTROL
PRE-HEAT
GND
GND
CN2 28P
5V
5V
5V
GND
GND
GND
*RESET
THERMISTA 1
*WR
DATA0
DATA1
DATA2
DATA3
DATA4
DATA5
DATA6
DATA7
AD0
AD1
AD2
AD3
*CS0
*CS1
CS2
GND
GND
GND
GND

no mark : CAPTURE SW ON (S2)


15
16
17
18
19
20
21
22
CN1
28P
5V
5V
GND
GND
COLOUR A
COLOUR B
PRINT START
*PRINT
TIMING PULSE
HEAD CLK
LATCH
DATA 1
DATA 2
STROBE
DATA CLOCK
DATA ENABLE
G DATA7
G DATA6
G DATA5
G DATA4
G DATA3
G DATA2
G DATA1
G DATA0
V-CONTROL
PRE-HEAT
GND
GND
C2 0.022
C1 100 10V
R11 47k
CA1
CB2
PS4
PR5
TP6
HD1
HD2
HD3
HD4
HD5
R10 47k
R39 10
R47 10
TO MC-80 BOARD (8/8) CN1
(See Page 118)
CN2
28P
5V
5V
5V
GND
GND
GND
*RESET
THERMISTA 1
*WR
DATA0
DATA1
DATA2
DATA3
DATA4
DATA5
DATA6
DATA7
AD0
AD1
AD2
AD3
*CS0
*CS1
CS2
GND
GND
GND
GND
WR1
D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
A2
A3
CS0
CS1
CS2
TO MC-80 BOARD (8/8) CN2
(See Page 118)

HC-10 BOARD


1
4Vp-p
16 MHz
IC1 (118)

- **SIGNAL PATH (DIGITAL)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
WRITE				
READ	⇨			

SY-50 (SERVO/SYSTEM CONTROL), SW-4 (PP SET SENSOR), SW-5 (PP EJECT SENSOR), SW-6 (FG SENSOR), SW-7 (POSI SENSOR), SW-8 (PP LOAD SENSOR), SW-9 (LOCK TOP SENSOR), SW-10 (BTM SENSOR), PTC-8 (RIBBON LED), PTC-

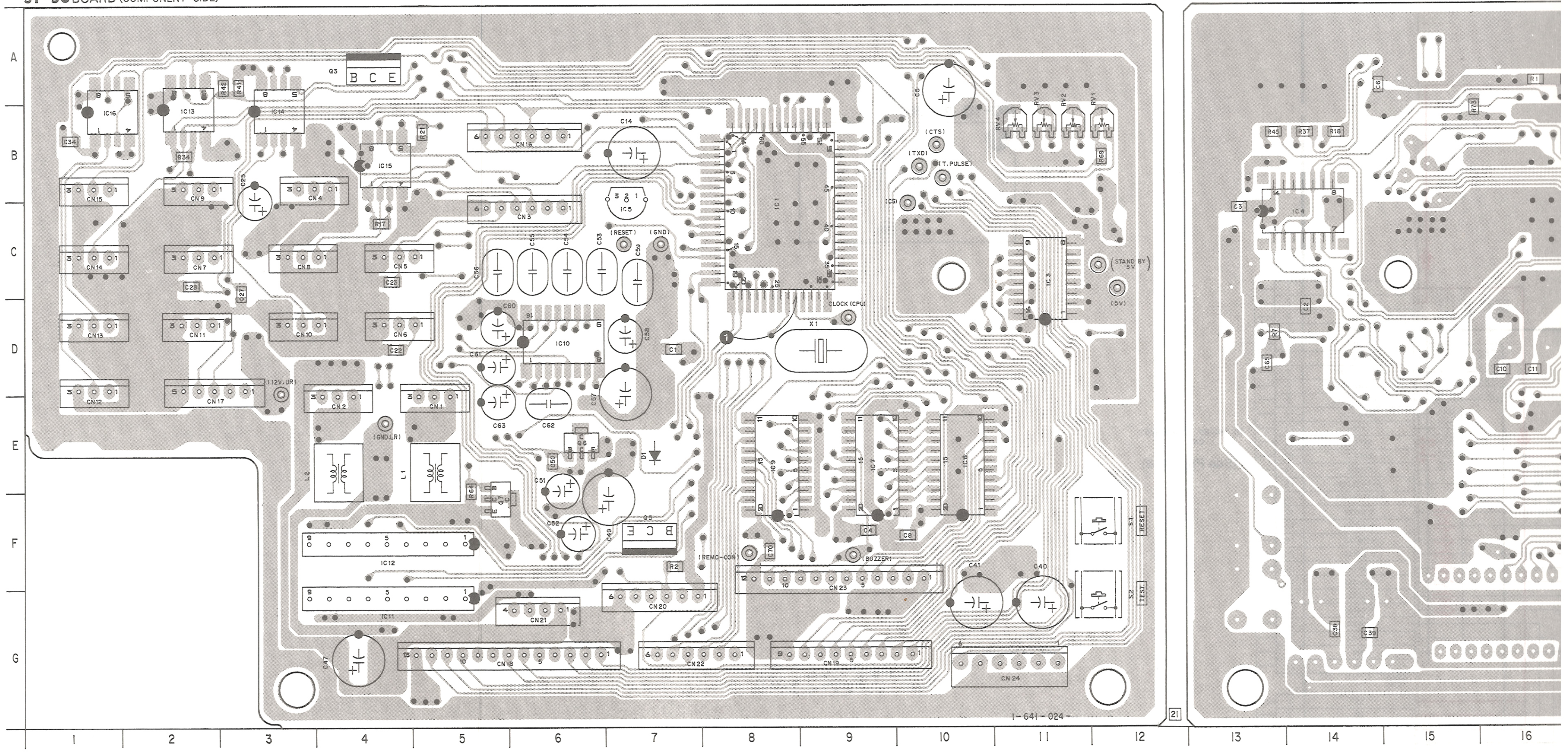
— Ref. No. SY-50 BOARD: 4000 series, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW-10, PTC-8, PTC-9, PTC-10, PTC-11, S-12 BOARDS: 10000 series —

SY-50 BOARD

CN001	E-7
CN002	E-4
CN003	C-6
CN004	B-3
CN005	C-4
CN006	D-4
CN007	C-2
CN008	C-3
CN009	B-2
CN010	D-3
CN011	D-2
CN012	E-1
CN013	D-1
CN014	C-1
CN015	B-1
CN016	B-6
CN017	E-2
CN018	G-5
CN019	G-9
CN020	G-7
CN021	G-6
CN022	G-7
CN023	F-9
CN024	G-11
D001	E-7
IC001	C-8
IC003	C-11
IC004	C-14
IC005	C-7
IC006	D-17
IC007	E-9
IC008	E-10
IC009	E-8
IC010	D-6
IC011	G-4
IC012	F-4
IC013	B-2
IC014	B-3
IC015	B-4
IC016	B-1
Q001	F-18
Q002	A-21
Q003	A-4
Q004	E-19
Q005	F-7
Q006	E-6
Q007	F-5
Q008	E-20
RV001	B-12
RV002	B-11
RV003	B-11
RV004	B-11

SY-50 BOARD (COMPONENT SIDE)

SY-50 BOARD (CONDUCTOR SIDE)


A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
IC16
IC13
IC14
IC15
Q3
B C E
CN15
CN9
CN4
CN16
CN3
C14
IC5
IC1
C5
(CTS)
(TXD)
(T.PULSE)
(CS)
RV4
RV3
RV2
RV1
CN14
CN7
CN8
CN5
(RESET)
(GND)
C55
C54
C53
C59
C56
IC3
(STAND BY 5V)
(5V)
CLOCK (CPU)
X1
CN13
CN11
CN10
CN6
C60
IC10
C58
C61
C57
C1
CN12
CN17
(12V.UR)
CN2
CN1
C63
C62
(GND.LR)
L2
L1
D1
C51
C52
C49
Q5
IC9
IC7
IC8
C4
C8
S1
RESET
S2
TEST
IC12
IC11
CN21
CN20
(REMO-CON)
(BUZZER)
CN23
C41
C40
C47
CN18
CN22
CN19
CN24
1-641-024-
IC4

< DIODE >

D001	8-719-110-16	DIODE	RD10ES-B1

< IC >

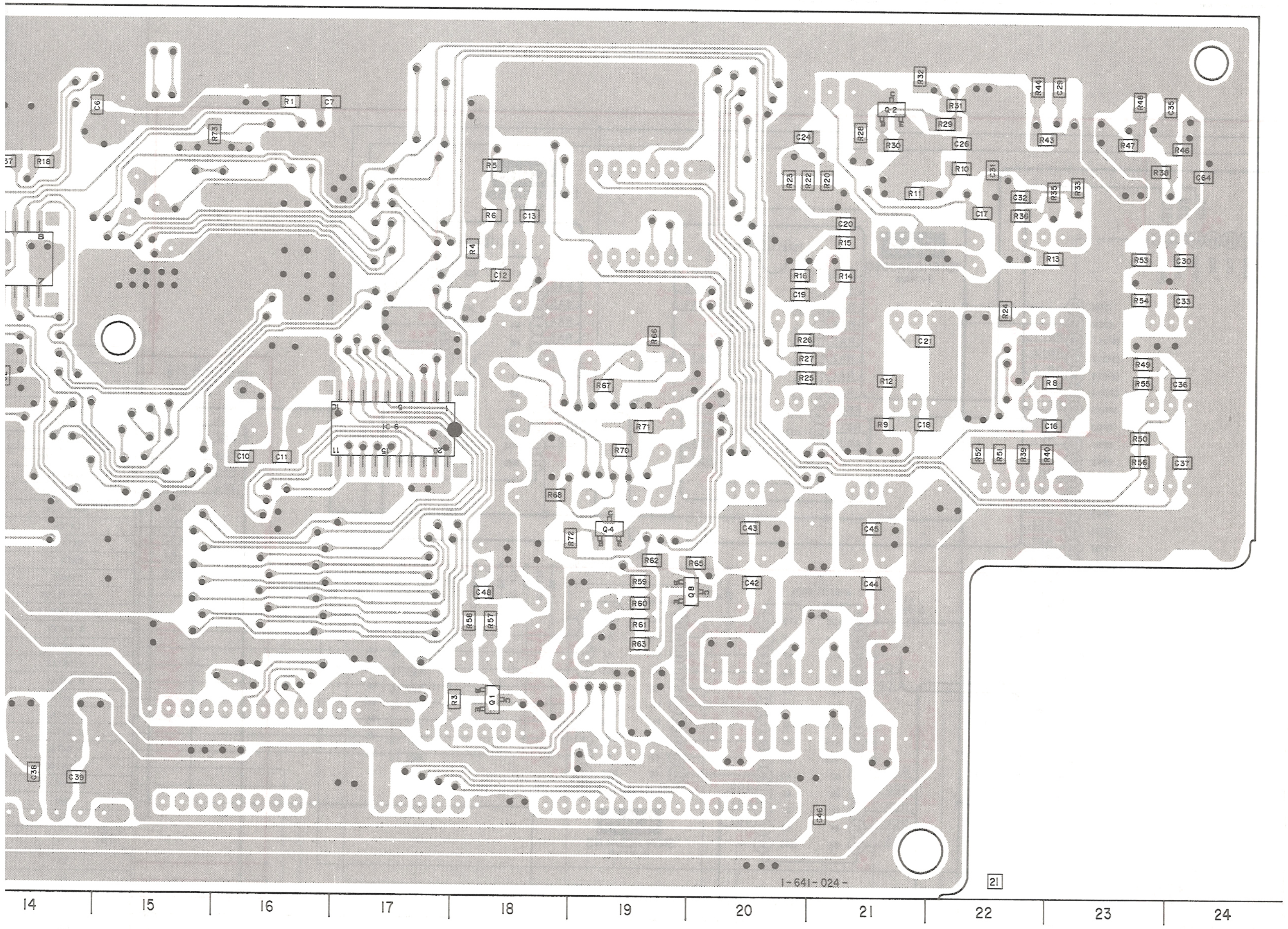
IC001	8-759-073-32	IC	TMP91C640F-2351
IC003	8-759-926-12	IC	SN74HC139ANS
IC004	8-759-925-85	IC	SN74HC32ANS
IC005	8-759-970-26	IC	PST523C
IC006	8-759-926-82	IC	SN74HC574ANS
IC007	8-759-926-82	IC	SN74HC574ANS
IC008	8-759-926-77	IC	SN74HC541ANS
IC009	8-759-926-82	IC	SN74HC574ANS
IC010	8-759-909-45	IC	CX20084
IC011	8-759-633-10	IC	M54544AL
IC012	8-759-633-10	IC	M54544AL
IC013	8-759-100-93	IC	uPC393G2
IC014	8-759-983-69	IC	LM358PS
IC015	8-759-100-93	IC	uPC393G2
IC016	8-759-100-93	IC	uPC393G2

< TRANSISTOR >

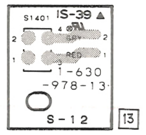
Q001	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q002	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q003	8-729-140-96	TRANSISTOR	KSC1008
Q004	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q005	8-729-807-12	TRANSISTOR	2SD1802-S
Q006	8-729-101-07	TRANSISTOR	2SB798-DL
Q007	8-729-101-07	TRANSISTOR	2SB798-DL
Q008	8-729-120-28	TRANSISTOR	2SC1623-L5L6

OR), PTC-8 (RIBBON LED), PTC-9 (PP TRAY LED), PTC-10 (RIBBON SENSOR), PTC-11 (PP TRAY SENSOR), S-12 (RB CART SWITCH) PRINTED WIRING BOARDS

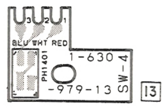
NDUCTOR SIDE)


IC6
Q1
Q4
Q8
1-641-024-
21
14
15
16
17
18
19
20
21
22
23
24

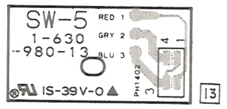
S-12 BOARD


S1401
IS-39
1-630
-978-13
S-12
13

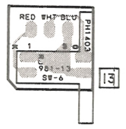
SW-4 BOARD


BLU WHT RED
PH1401
1-630
-979-13
SW-4
13

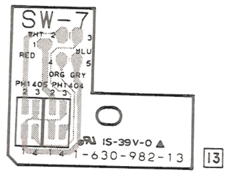
SW-5 BOARD


SW-5
1-630
-980-13
RED 1
GRY 2
BLU 3
PH1402
IS-39V-0
13

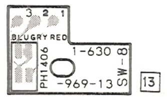
SW-6 BOARD


RED WHT BLU
PH1403
-981-13
SW-6
13

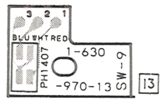
SW-7 BOARD


SW-7
WHT
RED
BLU
ORG GRY
PH1404 PH1405
IS-39V-0
1-630-982-13
13

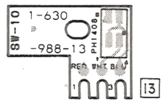
SW-8 BOARD


BLU GRY RED
PH1406
1-630
-969-13
SW-8
13

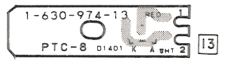
SW-9 BOARD


BLU WHT RED
PH1407
1-630
-970-13
SW-9
13

SW-10 BOARD


SW-10
1-630
-988-13
PH1408
RED WHT BLU
13

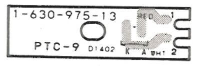
PTC-8 BOARD


1-630-974-13
PTC-8
D1401
13

(DIODE)

D1401 8-719-820-46 LED TLN107A

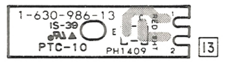
PTC-9 BOARD


1-630-975-13
PTC-9
D1402

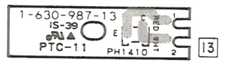
(DIODE)

D1402 8-719-820-46 LED TLN107A

PTC-10 BOARD


1-630-986-13
IS-39
PTC-10
PH1409
13

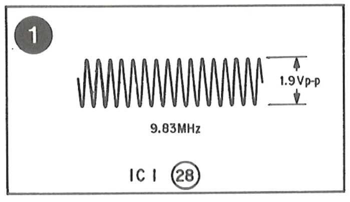
PTC-11 BOARD

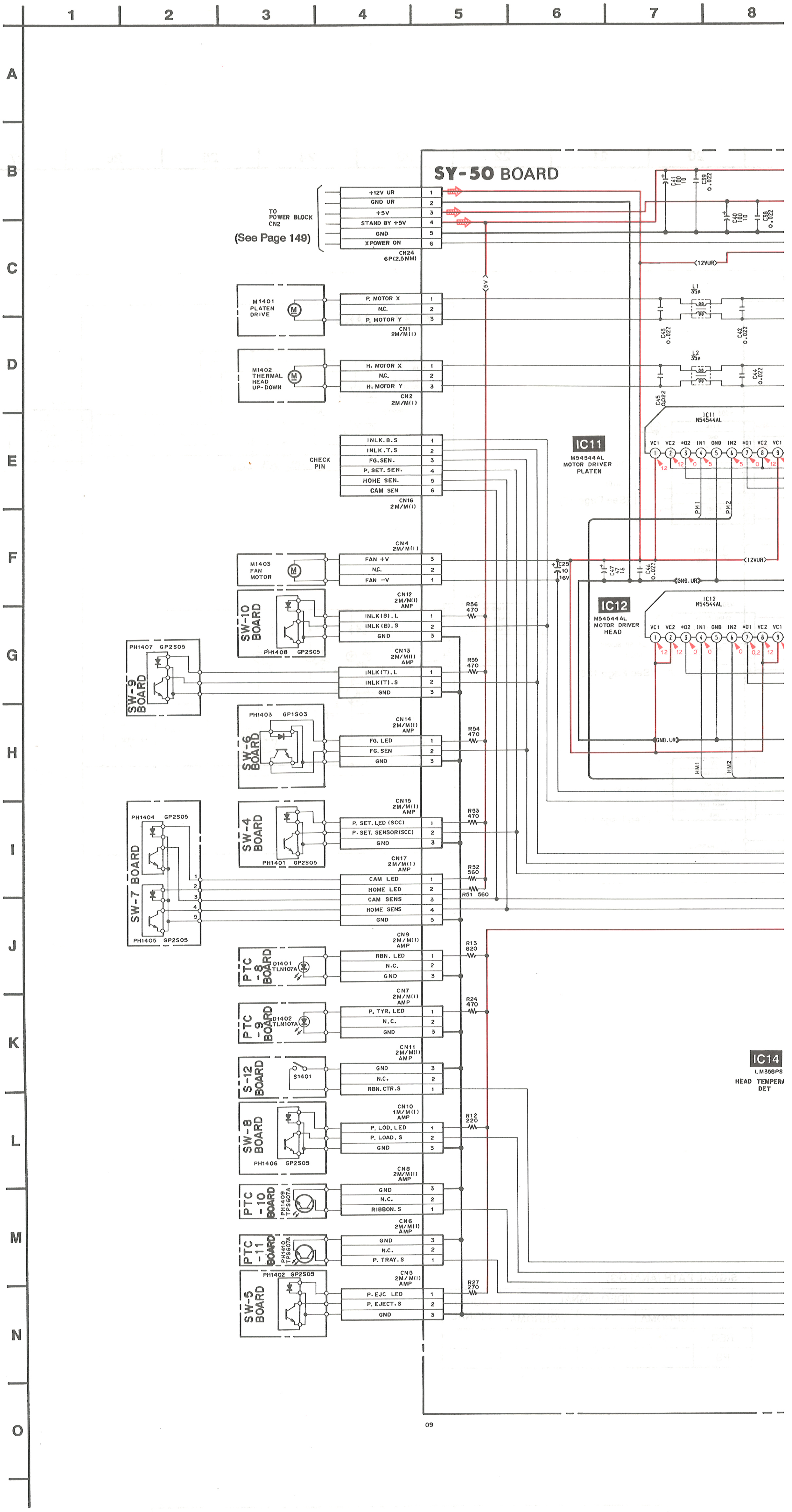

1-630-987-13
IS-39
PTC-11
PH1410
13

SY-50 (SERVO/SYSTEM CONTROL), SW-4 (PP SET SENSOR), SW-5 (PP EJECT SENSOR), SW-6 (FG SENSOR), SW-7 (POSI

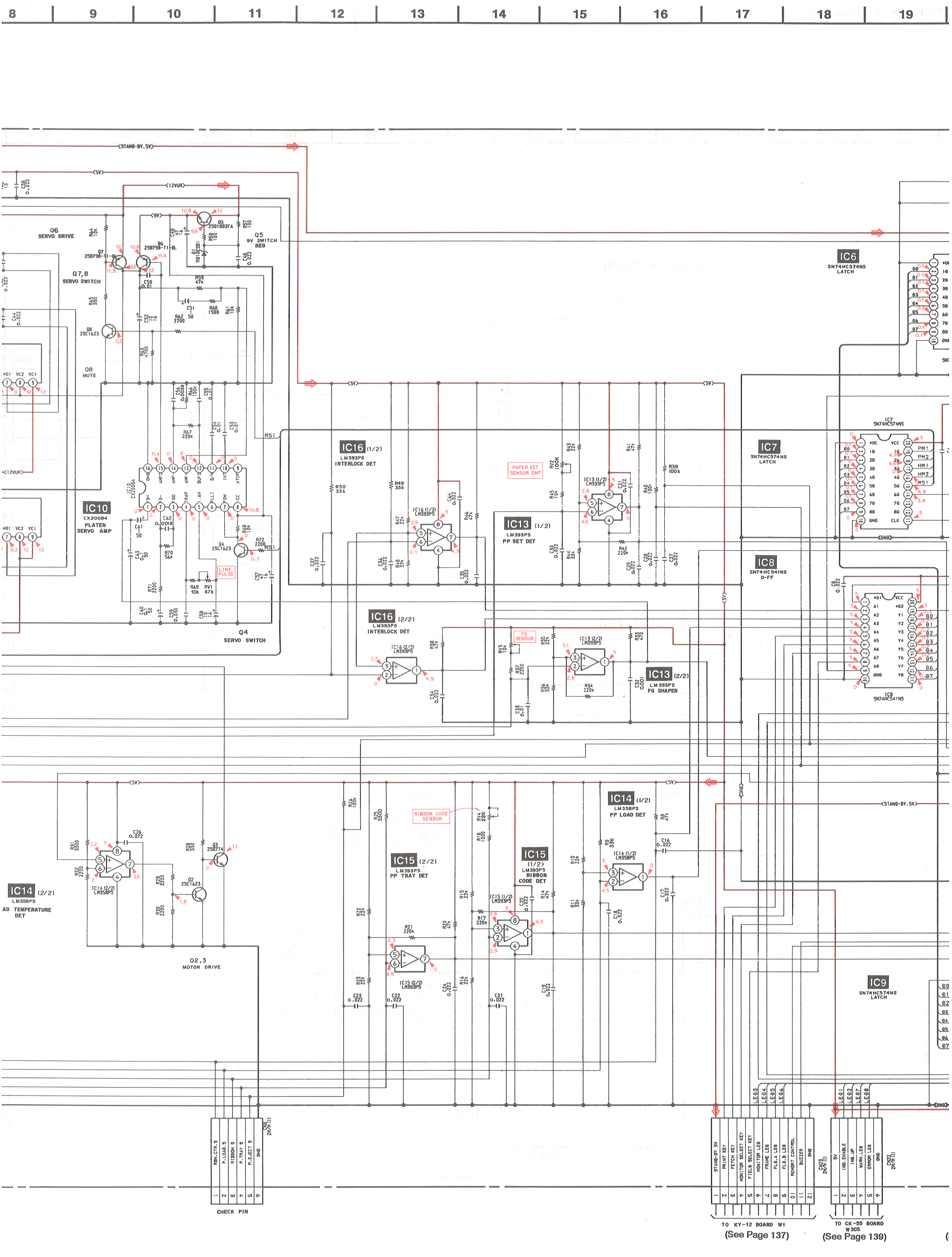
— Ref. No. SY-50 BOARD: 4000 series, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW-10, PTC-8, PTC-9, PTC-10, PTC-11, S-12 BOARDS: 10000 series —

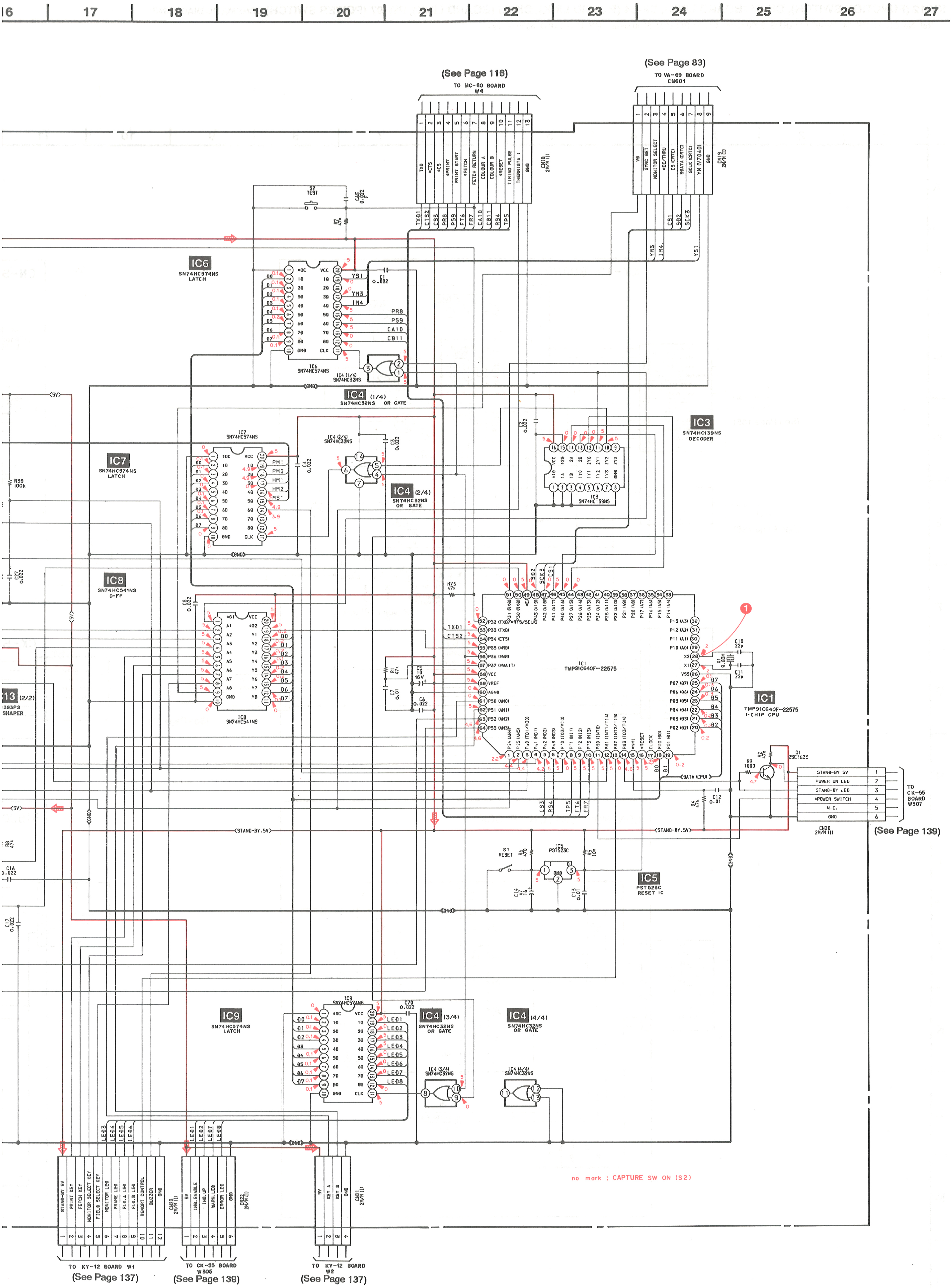
SY-50 BOARD




1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
SY-50 BOARD
TO POWER BLOCK CN2
(See Page 149)
+12V UR
GND UR
+5V
STAND BY +5V
GND
XPOWER ON
CN24 6P(2.5MM)
M1401 PLATEN DRIVE
P. MOTOR X
N.C.
P. MOTOR Y
CN1 2M/M(I)
M1402 THERMAL HEAD UP-DOWN
H. MOTOR X
N.C.
H. MOTOR Y
CN2 2M/M(I)
CHECK PIN
INLK.B.S
INLK.T.S
FG.SEN.
P. SET. SEN.
HOHE SEN.
CAM SEN
CN16 2M/M(I)
CN4 2M/M(I)
M1403 FAN MOTOR
FAN +V
N.C.
FAN −V
SW-10 BOARD
PH1408 GP2S05
CN12 2M/M(I) AMP
INLK(B).L
INLK(B).S
GND
SW-9 BOARD
PH1407 GP2S05
CN13 2M/M(I) AMP
INLK(T).L
INLK(T).S
SW-6 BOARD
PH1403 GP1S03
CN14 2M/M(I) AMP
FG. LED
FG. SEN
SW-4 BOARD
PH1401 GP2S05
CN15 2M/M(I) AMP
P. SET. LED (SCC)
P. SET. SENSOR(SCC)
SW-7 BOARD
PH1404 GP2S05
PH1405 GP2S05
CN17 2M/M(I) AMP
CAM LED
HOME LED
CAM SENS
HOME SENS
PTC-8 BOARD
D1401 TLN107A
CN9 2M/M(I) AMP
RBN. LED
N.C.
PTC-9 BOARD
D1402 TLN107A
CN7 2M/M(I) AMP
P. TYR. LED
S-12 BOARD
S1401
CN11 2M/M(I) AMP
RBN.CTR.S
SW-8 BOARD
PH1406 GP2S05
CN10 1M/M(I) AMP
P. LOD. LED
P. LOAD. S
PTC-10 BOARD
PH1409 TPS607A
CN8 2M/M(I) AMP
RIBBON. S
PTC-11 BOARD
PH1410 TPS607A
CN6 2M/M(I) AMP
P. TRAY. S
SW-5 BOARD
PH1402 GP2S05
CN5 2M/M(I) AMP
P. EJC LED
P. EJECT. S
5V
12VUR
GND. UR
R56 470
R55 470
R54 470
R53 470
R52 560
R51 560
R13 820
R24 470
R12 220
R27 270
C41 100 10
C39 0.022
C40 100 10
C38 0.022
L1 35µ
L2 35µ
C43 0.022
C42 0.022
C45 0.022
C44 0.022
C25 10 16V
C47 47 16
C46 0.022
IC11
M54544AL
MOTOR DRIVER PLATEN
IC11 M54544AL
VC1
VC2
*O2
IN1
GND
IN2
*O1
12
0
5
0.2
PM1
PM2
IC12
M54544AL
MOTOR DRIVER HEAD
IC12 M54544AL
HM1
HM2
IC14
LM358PS
HEAD TEMPERA
DET
09

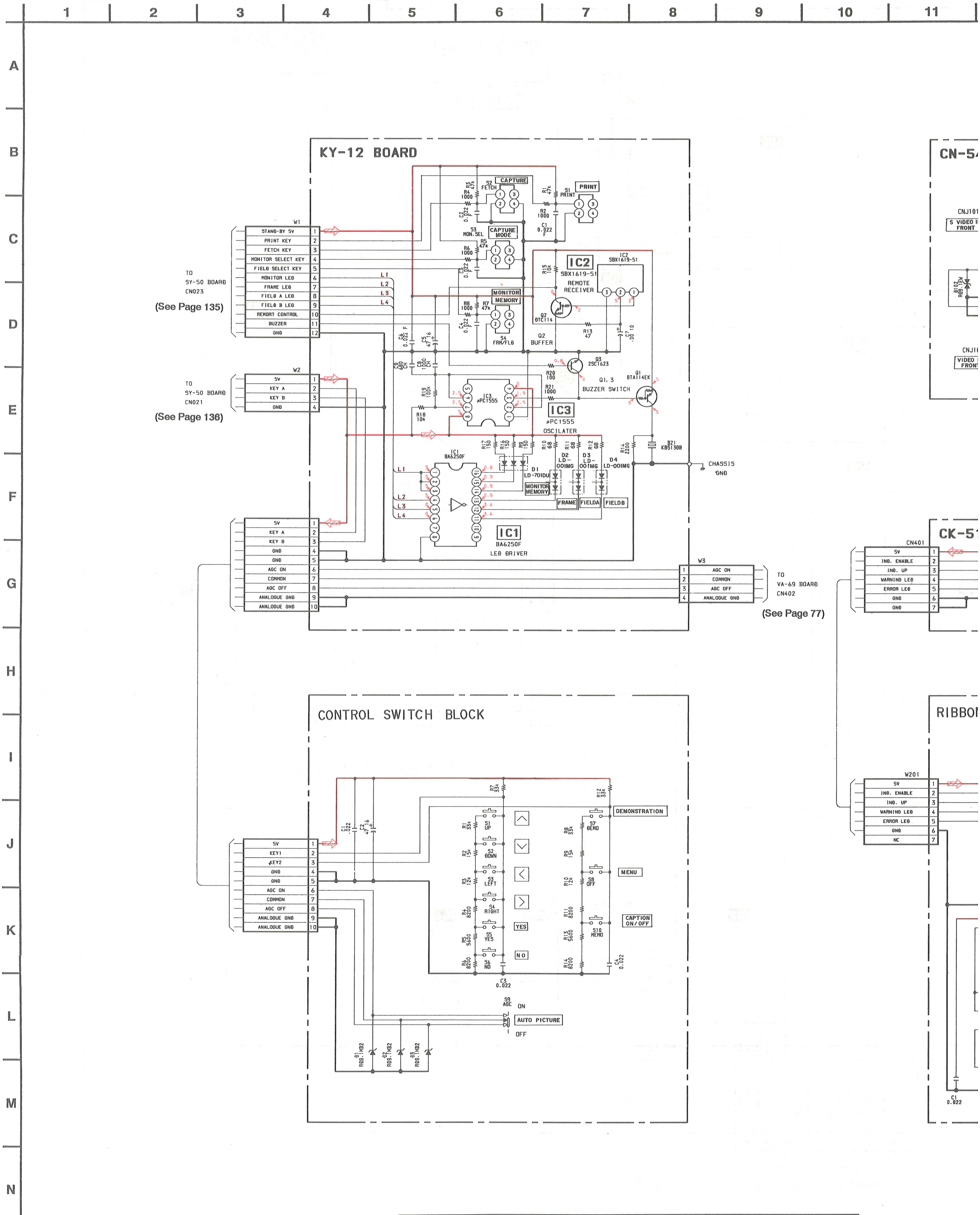
(POSI SENSOR), SW-8 (PP LOAD SENSOR), SW-9 (LOCK TOP SENSOR), SW-10 (BTM SENSOR), PTC-8 (RIBBON LED), PTC-9 (PP TRAY LED), PTC-10 (RIBBON SENSOR), PTC

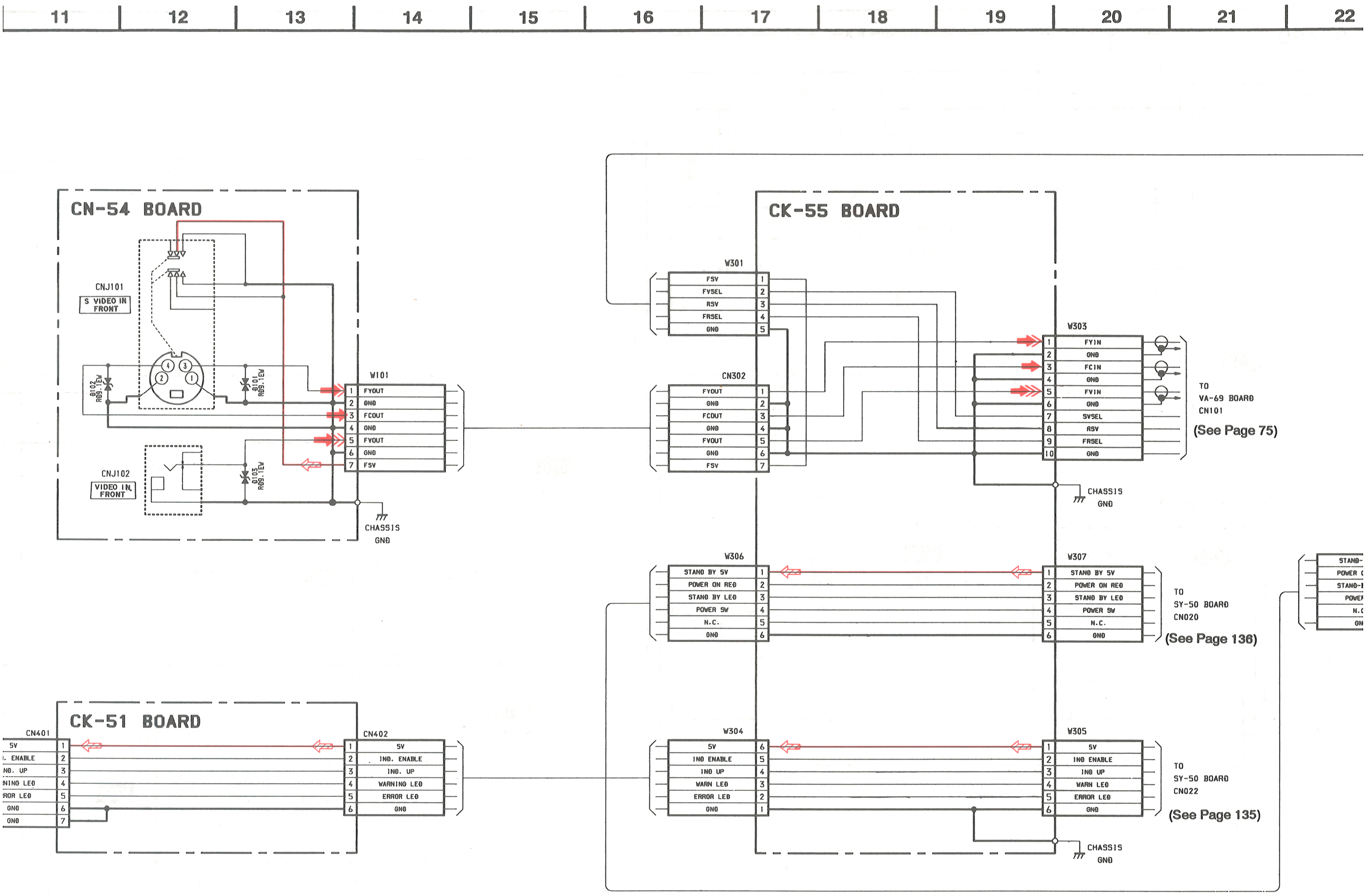

8
9
10
11
12
13
14
15
16
17
18
19
<STANB-BY.5V>
<5V>
<12VUR>
<9V>
Q6 SERVO DRIVE
Q7 2SB798-T1-DL
Q7,8 SERVO SWITCH
Q6 2SB798-T1-DL
Q5 2SD1802FA
Q5 9V SWITCH REG
Q8 2SC1623
Q8 MUTE
IC10 CX20084 PLATEN SERVO AMP
Q4 2SC1623
Q4 SERVO SWITCH
LINE PULSE
MS1
IC16 (1/2) LM393PS INTERLOCK DET
IC16 (2/2) LM393PS INTERLOCK DET
IC13 (1/2) LM393PS PP SET DET
IC13 (2/2) LM393PS FG SHAPER
PAPER SET SENSOR DNP
FG SENSOR
IC6 SN74HC574NS LATCH
IC7 SN74HC574NS LATCH
IC8 SN74HC541NS D-FF
IC9 SN74HC574NS LATCH
IC14 (1/2) LM358PS PP LOAD DET
IC14 (2/2) LM358PS TEMPERATURE DET
IC15 (1/2) LM393PS RIBBON CODE DET
IC15 (2/2) LM393PS PP TRAY DET
RIBBON CODE SENSOR
Q2 2SC1623
Q3 2SB774
Q2,3 MOTOR DRIVE
RBN.CTR.S
P.LOAD.S
RIBBON S
P.TRAY S
P.EJECT S
GND
CN5 2K(M11)
CHECK PIN
STAND-BY 5V
PRINT KEY
FETCH KEY
MONITOR SELECT KEY
FIELD SELECT KEY
MONITOR LED
FRAME LED
FLD.A LED
FLD.B LED
REMOTE CONTROL
BUZZER
GND
CN23 2K(M11)
TO KY-12 BOARD W1
(See Page 137)
5V
IND.ENABLE
IND.UP
WARN.LED
ERROR LED
GND
CN22 2K(M11)
TO CK-55 BOARD W305
(See Page 139)

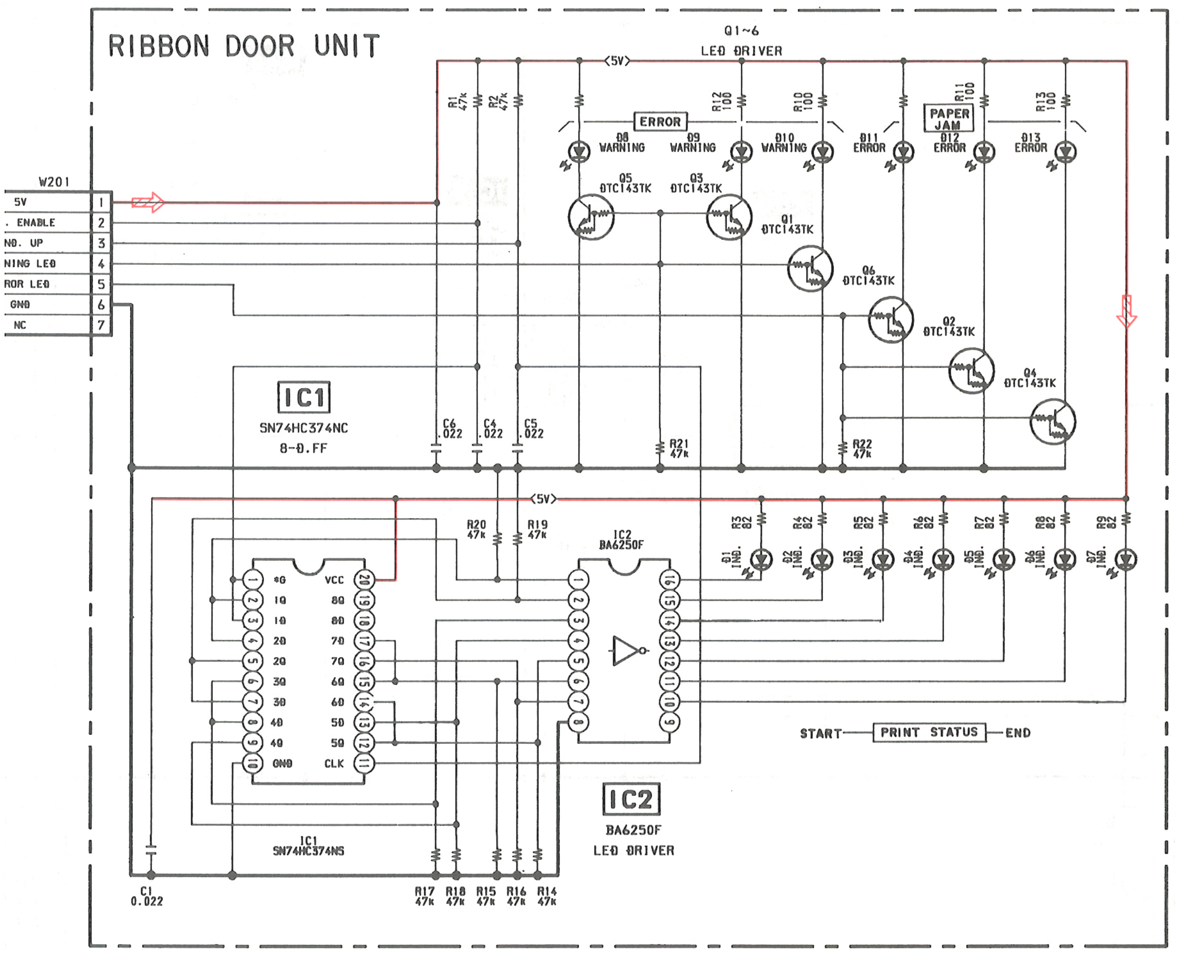

16
17
18
19
20
21
22
23
24
25
26
27
(See Page 116)
TO MC-80 BOARD W4
TXD
*CTS
*CS
*PRINT START
*FETCH
FETCH RETURN
COLOUR A
COLOUR B
*RESET
TIMING PULSE
THERMISTA
GND
CN18 2P/M (I)
(See Page 83)
TO VA-69 BOARD CN601
VD
SYNC DET
MONITOR SELECT
*EE/THRU
CS (CRTC)
SDATA (CRTC)
SCLK (CRTC)
YM (V7040)
GND
CN19 2P/M (I)
S2 TEST
C45 0.022
IC6
SN74HC574NS LATCH
IC4 (1/4)
SN74HC32NS OR GATE
IC7
SN74HC574NS LATCH
IC4 (2/4)
SN74HC32NS OR GATE
IC3
SN74HC139NS DECODER
IC8
SN74HC541NS D-FF
IC1
TMP91C640F-22575
I-CHIP CPU
IC5
PST523C RESET IC
S1 RESET
IC13 (2/2)
393PS SHAPER
IC9
SN74HC574NS LATCH
IC4 (3/4)
SN74HC32NS OR GATE
IC4 (4/4)
SN74HC32NS OR GATE
R39 100k
Q1 2SC1623
X1 9.83M
STAND-BY 5V
POWER ON LED
STAND-BY LED
*POWER SWITCH
N.C.
GND
CN20 2P/M (I)
TO CK-55 BOARD W307
(See Page 139)
DATA (CPU)
STAND-BY.5V
GND
5V
STAND-BY 5V
PRINT KEY
FETCH KEY
MONITOR SELECT KEY
FIELD SELECT KEY
MONITOR LED
FRAME LED
FLD.A LED
FLD.B LED
MEMORY CONTROL
BUZZER
GND
CN23 2P/M (I)
TO KY-12 BOARD W1
(See Page 137)
5V
IND.ENABLE
IND.UP
WARN.LED
ERROR LED
GND
CN22 2P/M (I)
TO CK-55 BOARD W305
(See Page 139)
5V
KEY A
KEY B
GND
CN21 2P/M (I)
TO KY-12 BOARD W2
(See Page 137)
1
no mark : CAPTURE SW ON (S2)

KY-12 (FUNCTION SWITCH), CK-51 (BOARD LINK), CK-54 (BOARD LINK), CK-55 (BOARD LINK), PW-97 (POWER SWITCH) SCHEMATIC DIAGRAMS

— Ref. No. CK-51, CK-54, PW-97 BOARDS: 3000 series, CK-55 BOARD: 5000 series, KY-12 BOARD: 6000 series —


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
KY-12 BOARD
W1
STAND-BY 5V
PRINT KEY
FETCH KEY
MONITOR SELECT KEY
FIELD SELECT KEY
MONITOR LED
FRAME LED
FIELD A LED
FIELD B LED
REMORT CONTROL
BUZZER
GND
TO SY-50 BOARD CN023
(See Page 135)
W2
5V
KEY A
KEY B
GND
TO SY-50 BOARD CN021
(See Page 136)
5V
KEY A
KEY B
GND
GND
AGC ON
COMMON
AGC OFF
ANALOGUE GND
ANALOGUE GND
L1
L2
L3
L4
S2 FETCH
CAPTURE
S1 PRINT
PRINT
S3 MON.SEL
CAPTURE MODE
MONITOR MEMORY
S4 FRM/FLD
IC2
SBX1619-51
REMOTE RECEIVER
Q2 DTC114
Q2 BUFFER
Q3 2SC1623
Q1 BTA114EK
Q1, 3 BUZZER SWITCH
IC3
μPC1555
OSCILATER
BZ1 KBS130B
CHASSIS GND
IC1 BA6250F
IC1
BA6250F
LED DRIVER
D1 LD-701DU
D2 LD-001MG
D3 LD-001MG
D4 LD-001MG
MONITOR MEMORY
FRAME
FIELDA
FIELDB
W3
AGC ON
COMMON
AGC OFF
ANALOGUE GND
TO VA-69 BOARD CN402
(See Page 77)
CONTROL SWITCH BLOCK
5V
KEY1
KEY2
GND
GND
AGC ON
COMMON
AGC OFF
ANALOGUE GND
ANALOGUE GND
S1 UP
S2 DOWN
S3 LEFT
S4 RIGHT
S5 YES
S6 NO
YES
NO
DEMONSTRATION
S7 DEMO
S8 OFF
MENU
CAPTION ON/OFF
S10 MEMO
S9 AGC
ON
OFF
AUTO PICTURE
D1 RD9.1MB2
D2 RD9.1MB2
D3 RD9.1MB2
C3 0.022
C4 0.022
CN-54
CNJ101
S VIDEO IN FRONT
VIDEO IN FRONT
CK-51
CN401
5V
IND. ENABLE
IND. UP
WARNING LED
ERROR LED
GND
GND
RIBBON
W201
5V
IND. ENABLE
IND. UP
WARNING LED
ERROR LED
GND
NC
C1 0.022

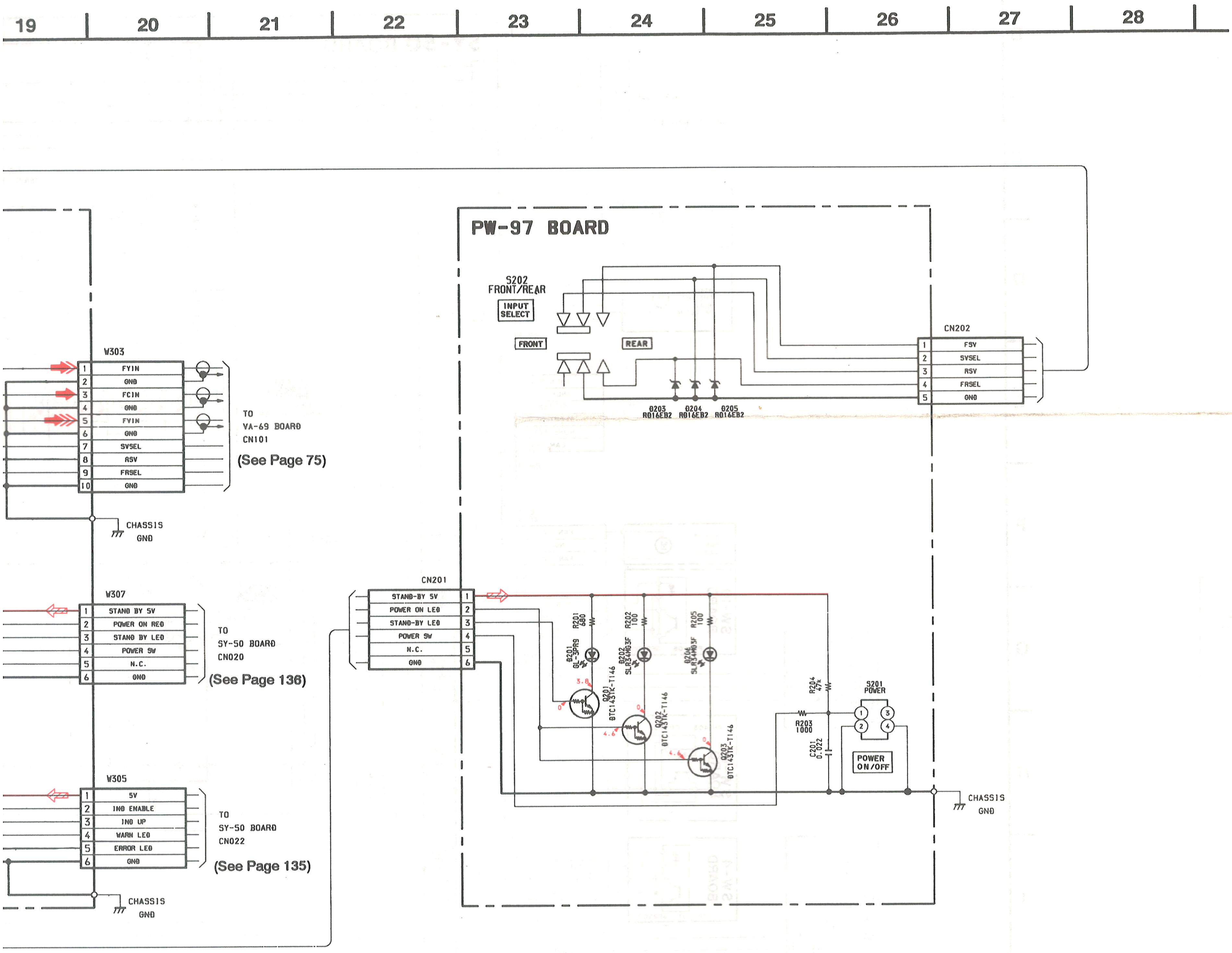

11
12
13
14
15
16
17
18
19
20
21
22
CN-54 BOARD
CNJ101
S VIDEO IN FRONT
CNJ102
VIDEO IN FRONT
D102 RD9.1EW
D101 RD9.1EW
D103 RD9.1EW
4
3
2
1
W101
1 FYOUT
2 GND
3 FCOUT
4 GND
5 FVOUT
6 GND
7 F5V
CHASSIS GND
CK-55 BOARD
W301
FSV 1
FVSEL 2
RSV 3
FRSEL 4
GND 5
CN302
FYOUT 1
GND 2
FCOUT 3
GND 4
FVOUT 5
GND 6
F5V 7
W303
1 FYIN
2 GND
3 FCIN
4 GND
5 FVIN
6 GND
7 SVSEL
8 RSV
9 FRSEL
10 GND
TO
VA-69 BOARD
CN101
(See Page 75)
CHASSIS GND
W306
STAND BY 5V 1
POWER ON RED 2
STAND BY LED 3
POWER SW 4
N.C. 5
GND 6
W307
1 STAND BY 5V
2 POWER ON RED
3 STAND BY LED
4 POWER SW
5 N.C.
6 GND
TO
SY-50 BOARD
CN020
(See Page 136)
STAND-
POWER
STAND-
POWER
N.C
GN
W304
5V 6
IND ENABLE 5
IND UP 4
WARN LED 3
ERROR LED 2
GND 1
W305
1 5V
2 IND ENABLE
3 IND UP
4 WARN LED
5 ERROR LED
6 GND
TO
SY-50 BOARD
CN022
(See Page 135)
CHASSIS GND
CK-51 BOARD
CN401
5V 1
. ENABLE 2
ND. UP 3
NING LED 4
ROR LED 5
GND 6
GND 7
CN402
1 5V
2 IND. ENABLE
3 IND. UP
4 WARNING LED
5 ERROR LED
6 GND


RIBBON DOOR UNIT
Q1~6
LED DRIVER
<5V>
W201
5V 1
. ENABLE 2
ND. UP 3
NING LED 4
ROR LED 5
GND 6
NC 7
R1 47k
R2 47k
R12 100
R10 100
R11 100
R13 100
ERROR
PAPER JAM
D8 WARNING
D9 WARNING
D10 WARNING
D11 ERROR
D12 ERROR
D13 ERROR
Q5 DTC143TK
Q3 DTC143TK
Q1 DTC143TK
Q6 DTC143TK
Q2 DTC143TK
Q4 DTC143TK
IC1
SN74HC374NC
8-D.FF
C6 .022
C4 .022
C5 .022
R21 47k
R22 47k
<5V>
R20 47k
R19 47k
IC2 BA6250F
R3 82
R4 82
R5 82
R6 82
R7 82
R8 82
R9 82
D1 IND.
D2 IND.
D3 IND.
D4 IND.
D5 IND.
D6 IND.
D7 IND.
*G
1Q
1D
2D
2Q
3Q
3D
4D
4Q
GND
VCC
8Q
8D
7D
7Q
6Q
6D
5D
5Q
CLK
START
PRINT STATUS
END
IC1 SN74HC374NS
C1 0.022
R17 47k
R18 47k
R15 47k
R16 47k
R14 47k
IC2
BA6250F
LED DRIVER

- **SIGNAL PATH (ANALOG)**

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	➡⋙
PB			

FUNCTION SW


19
20
21
22
23
24
25
26
27
28
PW-97 BOARD
S202
FRONT/REAR
INPUT SELECT
FRONT
REAR
D203
RD16EB2
D204
RD16EB2
D205
RD16EB2
CN202
1 FSV
2 SVSEL
3 RSV
4 FRSEL
5 GND
W303
1 FYIN
2 GND
3 FCIN
4 GND
5 FVIN
6 GND
7 SVSEL
8 RSV
9 FRSEL
10 GND
TO
VA-69 BOARD
CN101
(See Page 75)
CHASSIS
GND
W307
1 STAND BY 5V
2 POWER ON REQ
3 STAND BY LED
4 POWER SW
5 N.C.
6 GND
TO
SY-50 BOARD
CN020
(See Page 136)
CN201
STAND-BY 5V
POWER ON LED
STAND-BY LED
POWER SW
N.C.
GND
R201
680
R202
100
R205
100
D201
GL-3PR9
D202
SLR34MG3F
D206
SLR34MG3F
Q201
DTC143TK-T146
Q202
DTC143TK-T146
Q203
DTC143TK-T146
3.8
0
0
4.6
0
4.6
R204
47k
R203
1000
C201
0.022
S201
POWER
POWER ON/OFF
CHASSIS
GND
W305
1 5V
2 IND ENABLE
3 IND UP
4 WARN LED
5 ERROR LED
6 GND
TO
SY-50 BOARD
CN022
(See Page 135)
CHASSIS
GND

- **SIGNAL PATH (ANALOG)**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇛	
PB				

KY-12 (FUNCTION SWITCH), CK-51 (BOARD LINK), CK-54 (BOARD LINK), CK-55 (BOARD LINK), PW-97 (POWER SWITCH) PRINTED WIRING BOARDS

— Ref. No. CK-51, CK-54, PW-97 BOARDS: 3000 series, CK-55 BOARD: 5000 series, KY-12 BOARD: 6000 series —

〈 DIODE 〉

D001	8-719-018-50	DIODE	LD-701DU
D002	8-719-948-07	LED	LD-001MG
D003	8-719-948-07	LED	LD-001MG
D004	8-719-948-07	LED	LD-001MG

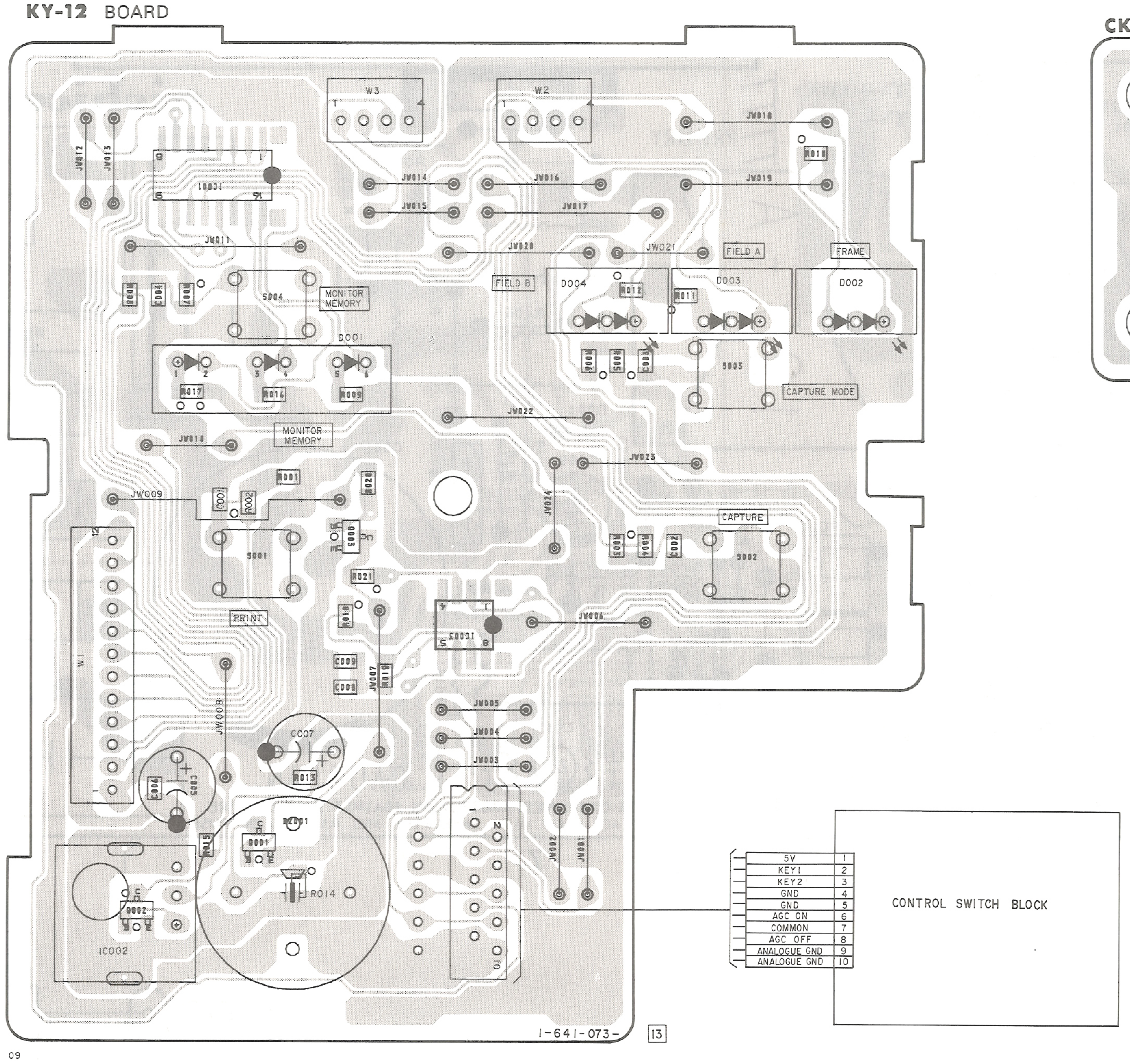
〈 IC 〉

IC001	8-759-987-65	IC	BA6250F
IC002	8-741-100-63	IC	SBX1619-51
IC003	8-759-144-85	IC	uPC1555G2

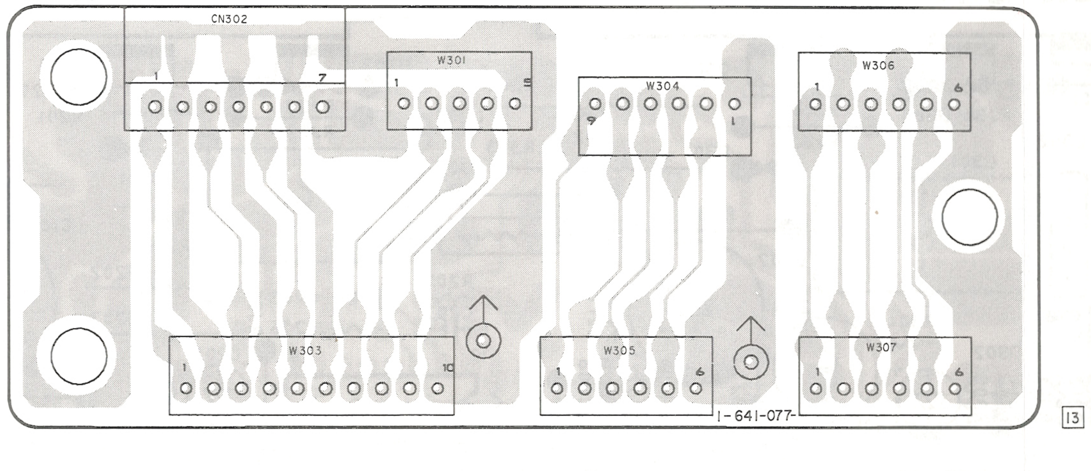
〈 TRANSISTOR 〉

Q001	8-729-901-04	TRANSISTOR	DTA114EK
Q002	8-729-900-53	TRANSISTOR	DTC114EK
Q003	8-729-120-28	TRANSISTOR	2SC1623-L5L6

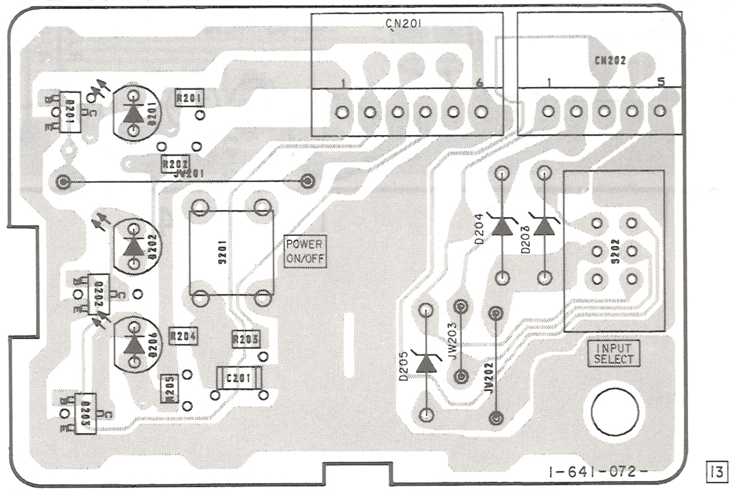
KY-12 BOARD


W3
W2
JW010
JW012
JW013
IC001
R018
JW014
JW016
JW019
JW015
JW017
JW011
JW020
JW021
FIELD A
FRAME
MONITOR MEMORY
S004
FIELD B
D004
D003
D002
D001
R017
R016
R009
S003
CAPTURE MODE
JW022
MONITOR MEMORY
JW018
JW023
JW009
S001
CAPTURE
S002
JW024
PRINT
IC003
JW026
W1
JW008
C007
R013
JW005
JW004
JW003
C005
IC002
Q002
Q001
R014
5V
KEY1
KEY2
GND
GND
AGC ON
COMMON
AGC OFF
ANALOGUE GND
ANALOGUE GND
CONTROL SWITCH BLOCK
1-641-073-
13
09

CK-55 BOARD


CN302
W301
W304
W306
W303
W305
W307
1-641-077-
13

PW-97 BOARD


CN201
CN202
D201
R201
R202
JW201
D202
S201
POWER ON/OFF
D204
D203
S202
R206
R204
R203
C201
R205
D206
D205
JW203
JW202
INPUT SELECT
1-641-072-
13

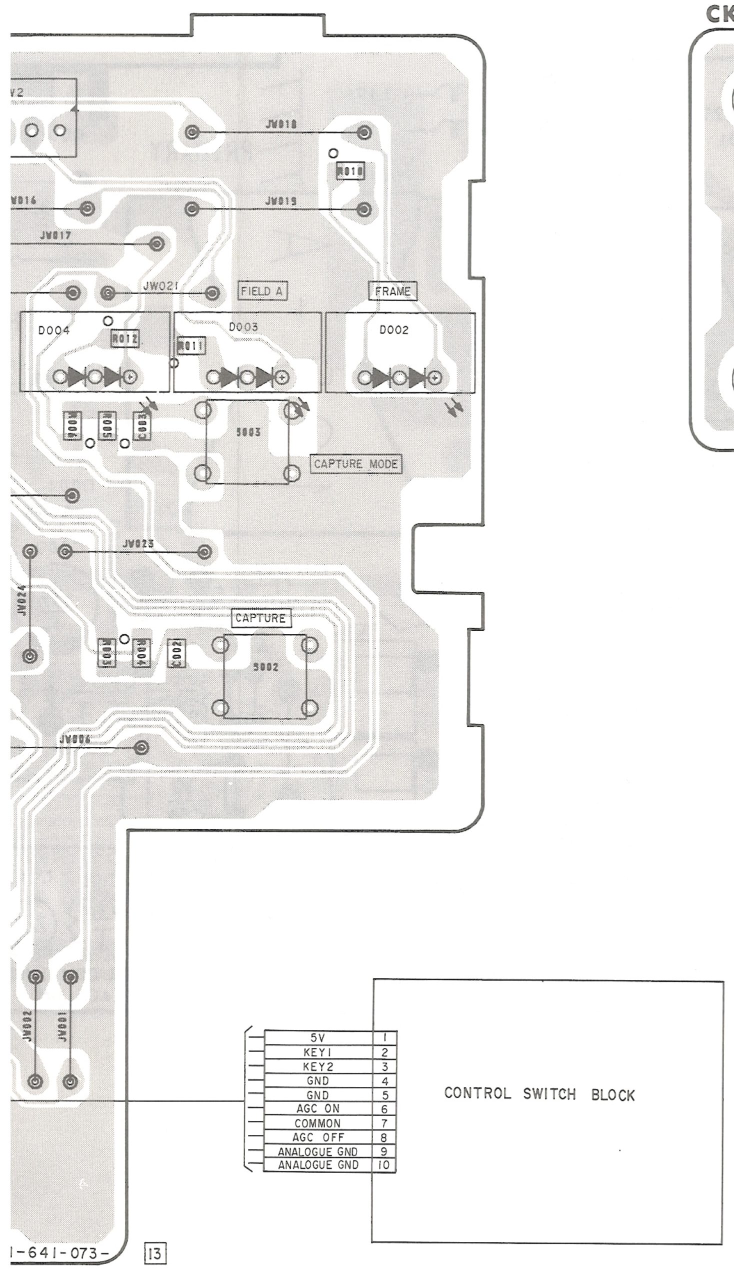
〈 DIODE 〉

D201	8-719-918-76	LED	GL-3PR9
D202	8-719-018-97	DIODE	GL3KG43
D203	8-719-110-49	DIODE	RD18ES-B2
D204	8-719-110-49	DIODE	RD18ES-B2
D205	8-719-110-49	DIODE	RD18ES-B2
D206	8-719-018-97	DIODE	GL3KG43

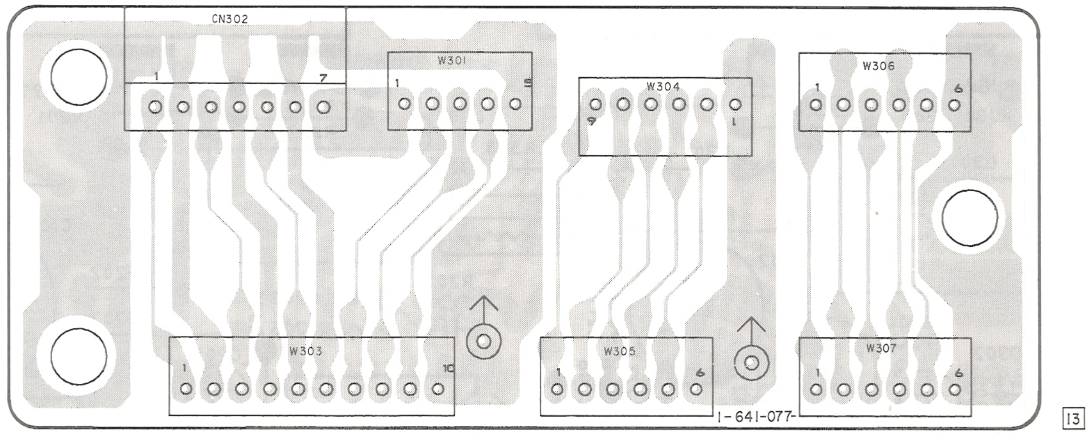
〈 TRANSISTOR 〉

Q201	8-729-900-98	TRANSISTOR	DTC143TK
Q202	8-729-900-98	TRANSISTOR	DTC143TK
Q203	8-729-900-98	TRANSISTOR	DTC143TK

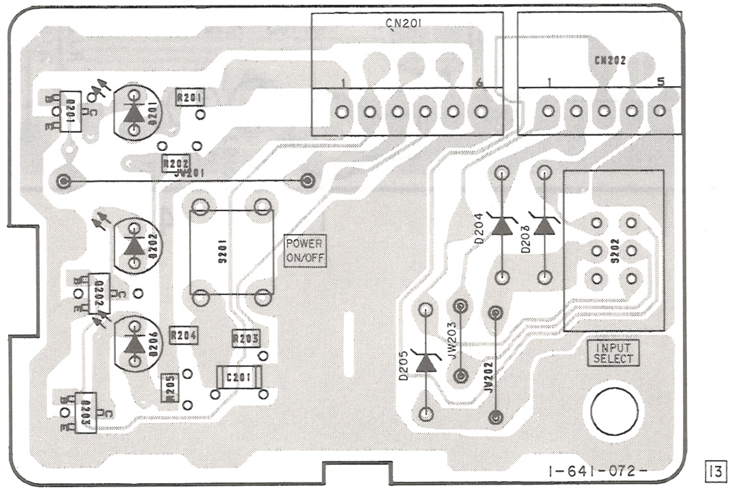
PW-97 (POWER SWITCH) PRINTED WIRING BOARDS


JW018
R018
JW016
JW019
JW017
JW021
FIELD A
FRAME
D004
R012
D003
R011
D002
S003
CAPTURE MODE
JW023
JW024
CAPTURE
S002
JW004
JW002
JW001
5V 1
KEY1 2
KEY2 3
GND 4
GND 5
AGC ON 6
COMMON 7
AGC OFF 8
ANALOGUE GND 9
ANALOGUE GND 10
CONTROL SWITCH BLOCK
1-641-073-
13

CK-55 BOARD


CN302
1
7
W301
1
5
W304
9
1
W306
1
6
W303
1
10
W305
1
6
W307
1
6
1-641-077-
13

PW-97 BOARD


CN201
1
6
CN202
1
5
R201
D201
Q201
R202
JW201
D202
S201
POWER ON/OFF
Q202
D206
R204
R203
Q203
R205
C201
D204
D203
S202
D205
JW203
JW202
INPUT SELECT
1-641-072-
13

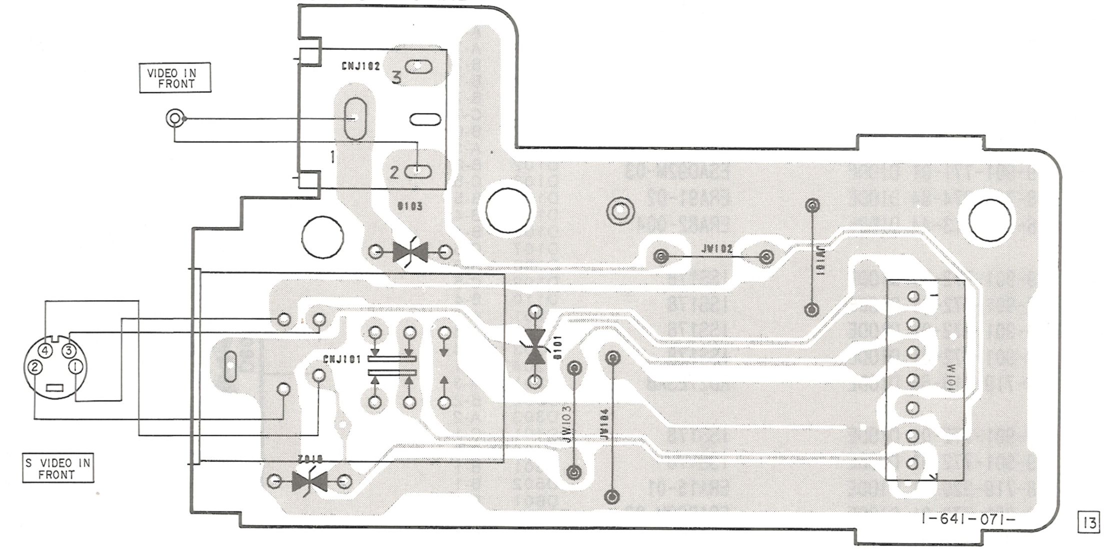
(DIODE)

D201	8-719-918-76	LED	GL-3PR9
D202	8-719-018-97	DIODE	GL3KG43
D203	8-719-110-49	DIODE	RD18ES-B2
D204	8-719-110-49	DIODE	RD18ES-B2
D205	8-719-110-49	DIODE	RD18ES-B2
D206	8-719-018-97	DIODE	GL3KG43

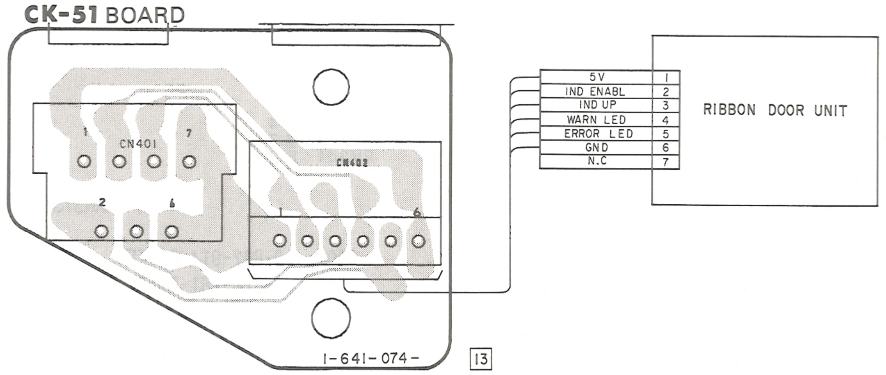
(TRANSISTOR)

Q201	8-729-900-98	TRANSISTOR	DTC143TK
Q202	8-729-900-98	TRANSISTOR	DTC143TK
Q203	8-729-900-98	TRANSISTOR	DTC143TK

CN-54 BOARD


VIDEO IN FRONT
CNJ102
3
1
2
D103
JW102
JW101
D102
CNJ101
D101
W101
JW103
JW104
S VIDEO IN FRONT
1-641-071-
13

CK-51 BOARD


CN401
1
7
2
6
CN402
1
6
5V 1
IND ENABL 2
IND UP 3
WARN LED 4
ERROR LED 5
GND 6
N.C 7
RIBBON DOOR UNIT
1-641-074-
13

POWER BLOCK PRINTED WIRING BOARD

— Ref. No. POWER BLOCK: 6000 series —

〈 DIODE 〉

D001	9-901-768-01	DIODE	D5SB60
D002	8-719-018-43	DIODE	RGIC
D003	9-901-772-01	DIODE	ISS178
D004	8-719-974-84	DIODE	ERA91-02
D005	8-719-110-75	DIODE	RD33ESAB
D006	8-719-110-75	DIODE	RD33ESAB
D007	8-719-974-84	DIODE	ERA91-02
D101	9-901-771-01	DIODE	ESAD92M-03
D102	8-719-974-84	DIODE	ERA91-02
D103	8-719-913-44	DIODE	ERA82-004
D104	9-901-772-01	DIODE	ISS178
D105	9-901-772-01	DIODE	ISS178
D106	9-901-772-01	DIODE	ISS178
D107	9-901-772-01	DIODE	ISS178
D108	8-719-110-65	DIODE	RD27ESAB
D109	9-901-772-01	DIODE	ISS178
D110	9-901-772-01	DIODE	ISS178
D201	8-719-920-31	DIODE	ERA15-01
D202	9-901-770-01	DIODE	ESAB92M-02
D203	9-901-772-01	DIODE	ISS178
D204	9-901-772-01	DIODE	ISS178
D301	8-719-920-31	DIODE	ERA15-01
D302	9-901-772-01	DIODE	ISS178
D303	9-901-770-01	DIODE	ESAB92M-02
D401	9-901-772-01	DIODE	ISS178
D402	8-719-109-85	DIODE	RD5. 6ESAB
D501	8-719-110-15	DIODE	RD10ESAB
D502	9-901-772-01	DIODE	ISS178
D601	9-901-772-01	DIODE	ISS178
D701	9-901-772-01	DIODE	ISS178
D702	8-719-110-34	DIODE	RD13ESAB
D801	9-901-772-01	DIODE	ISS178

〈 IC 〉

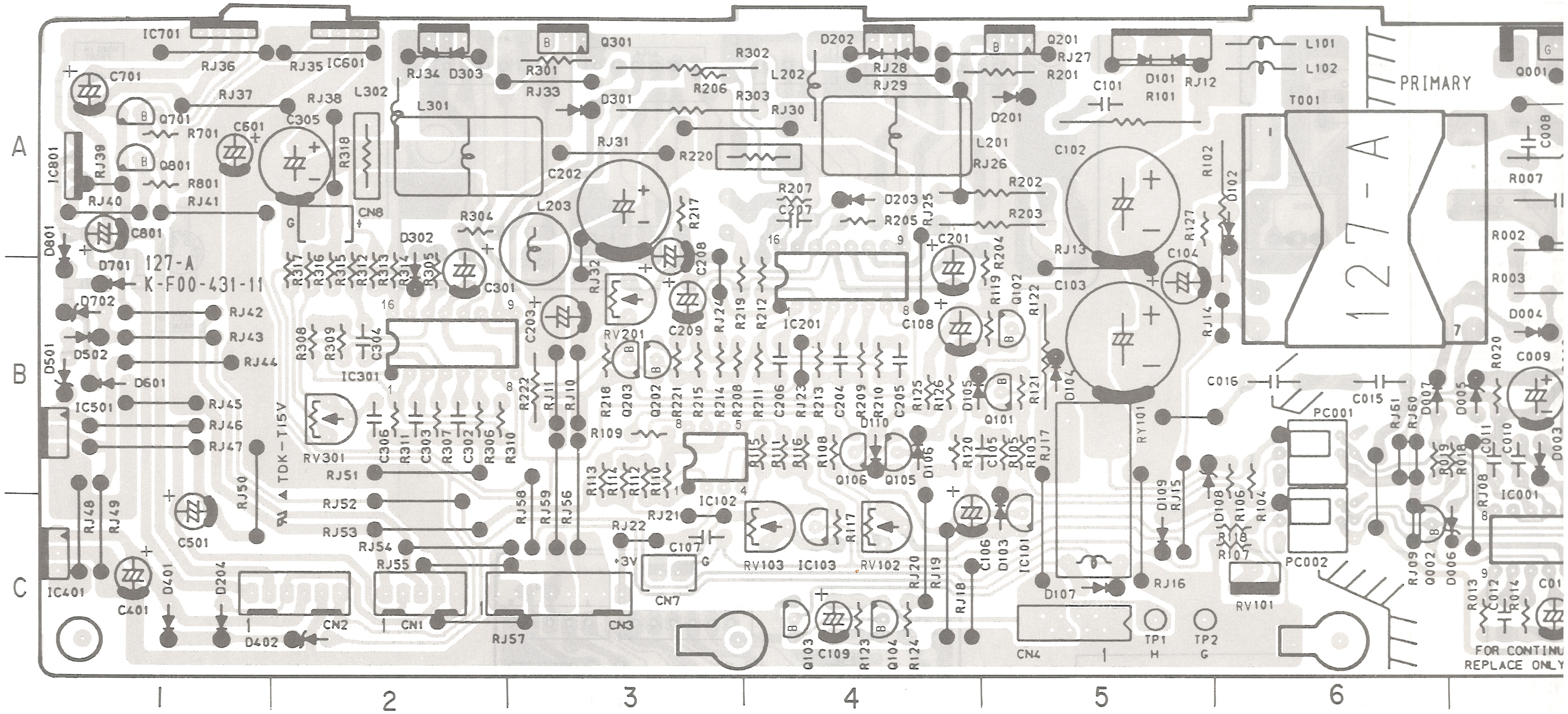
IC001	9-901-774-01	IC	M51995P
IC101	8-759-711-96	IC	NJM431L
IC102	8-759-135-80	IC	uPC358C
IC103	8-759-711-96	IC	NJM431L
IC201	8-759-937-59	IC	MB3759M
IC301	8-759-937-59	IC	MB3759M
IC401	8-759-701-56	IC	NJM78M05FA
IC501	8-759-701-78	IC	NJM7809FA
IC601	9-901-775-01	IC	PQ12RH1
IC701	9-901-775-01	IC	PQ12RH1
IC801	8-759-506-12	IC	PQ12RF1

POWER BLOCK	
CN001	C-2
CN002	C-2
CN003	C-3
CN004	C-5
D001	A-8
D002	A-7
D003	B-7
D004	B-7
D005	B-7
D006	C-7
D007	B-6
D101	A-5
D102	B-6
D103	C-5
D104	B-5
D105	B-4
D106	B-4
D107	C-5
D108	B-5
D109	C-5
D110	B-4
D201	A-5
D202	A-4
D203	A-4
D204	C-1
D301	A-3
D302	B-2
D303	A-2
D401	C-1
D402	C-2
D501	B-1
D502	B-1
D601	B-1
D701	B-1
D702	B-1
D801	B-1
IC001	C-7
IC101	C-5
IC102	B-3
IC103	C-4
IC201	B-4
IC301	B-2
IC401	C-1
IC501	B-1
IC601	A-2
IC701	A-1
IC801	A-1
Q001	A-7
Q002	C-6
Q101	B-5
Q102	B-5
Q103	C-4
Q104	C-4
Q105	B-4
Q106	B-4
Q201	A-5
Q202	B-3
Q203	B-3
Q301	A-3
Q701	A-1
Q801	A-1
RV101	C-6
RV102	C-4
RV103	C-4
RV201	B-3
RV301	B-2

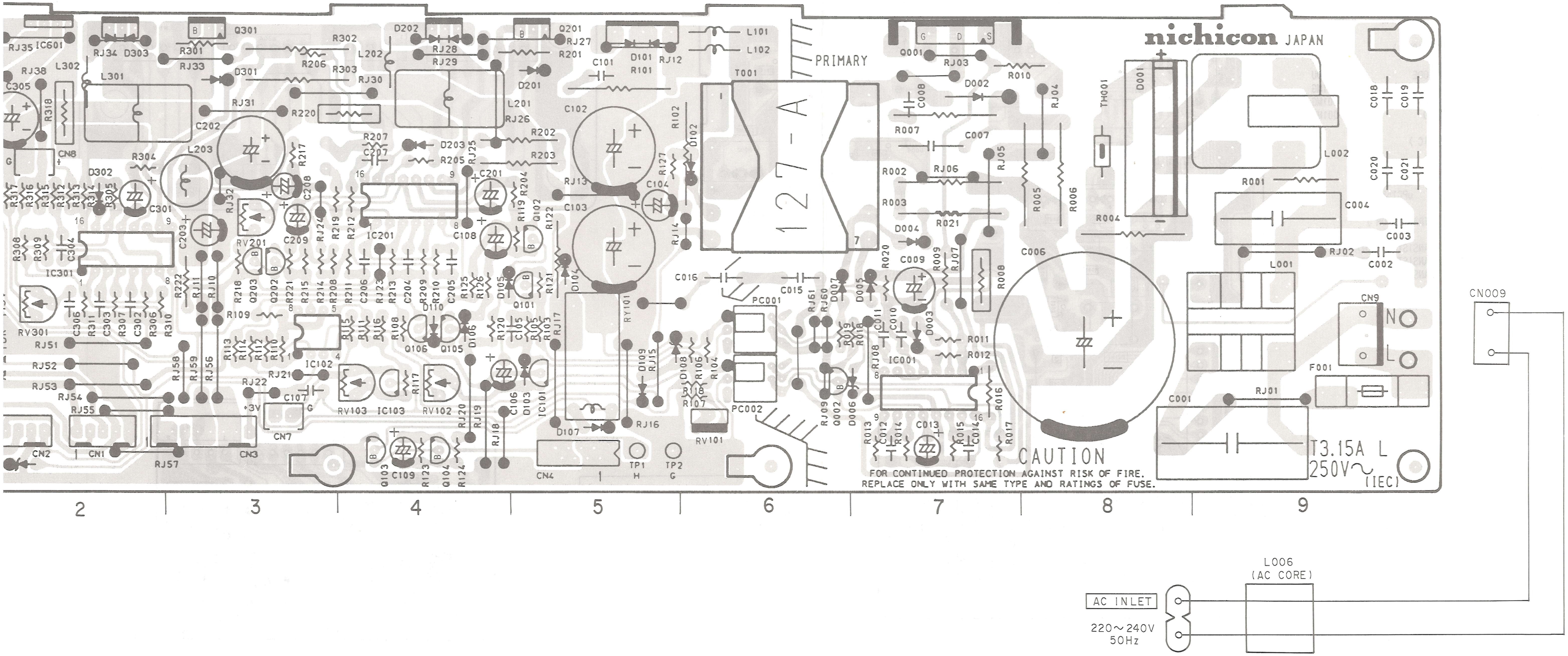
〈 TRANSISTOR 〉

Q001	9-902-914-01	FET	2SK1082
Q002	8-729-281-59	TRANSISTOR	2SC1815
Q101	8-729-202-43	TRANSISTOR	2SA1020
Q102	8-729-201-59	TRANSISTOR	2SA1015
Q103	9-901-781-01	TRANSISTOR	RN1001
Q104	8-729-201-59	TRANSISTOR	2SA1015
Q105	9-901-781-01	TRANSISTOR	RN1001
Q106	9-901-781-01	TRANSISTOR	RN1001
Q201	9-901-783-01	TRANSISTOR	2SA1451
Q202	9-901-782-01	TRANSISTOR	RN2001
Q203	9-901-781-01	TRANSISTOR	RN1001
Q301	9-901-783-01	TRANSISTOR	2SA1451
Q701	9-901-781-01	TRANSISTOR	RN1001
Q801	9-901-781-01	TRANSISTOR	RN1001

SWITCHING POWER BLOCK BOARD

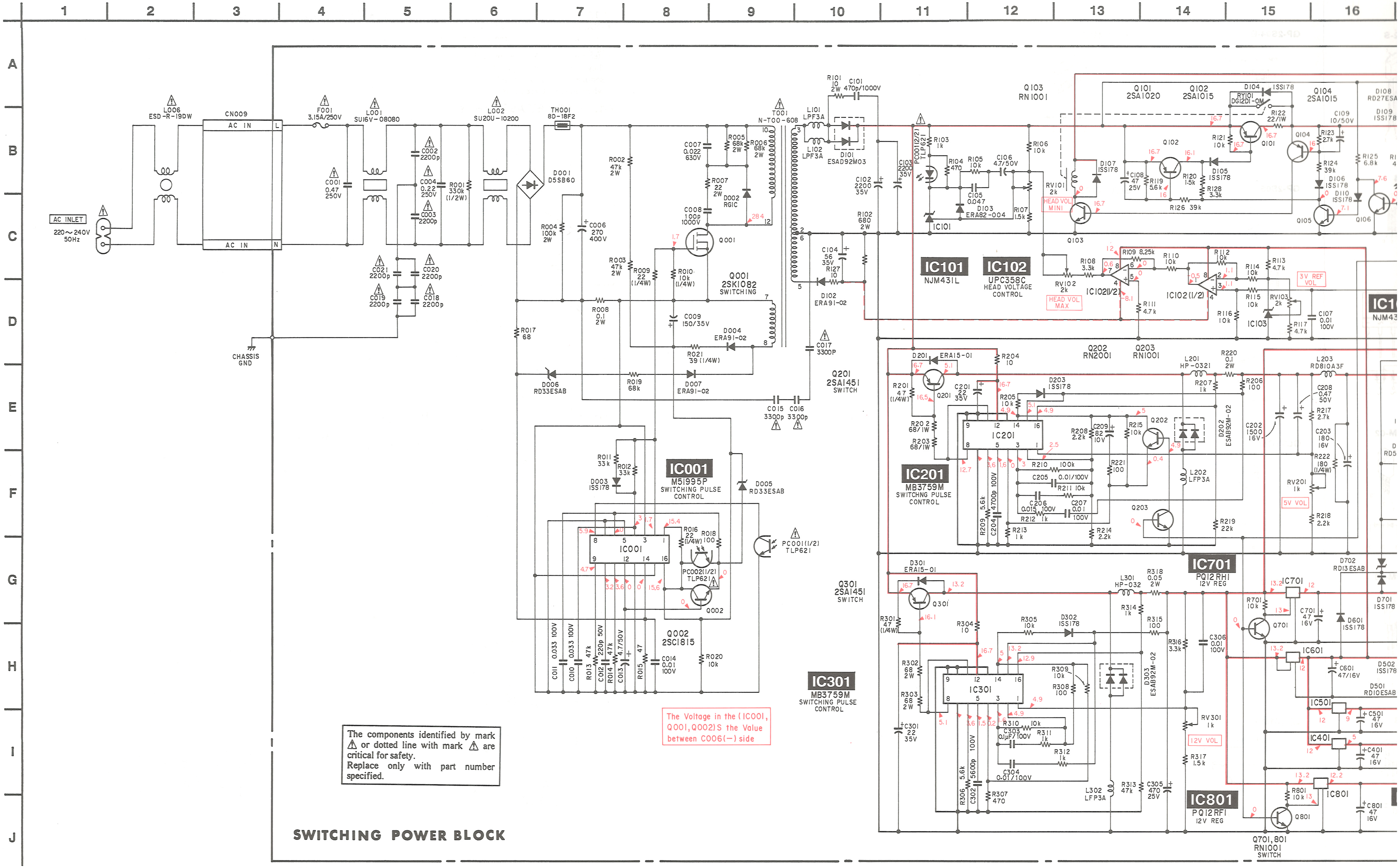

A
B
C
1
2
3
4
5
6
IC701
IC601
IC801
IC501
IC401
IC301
IC201
IC102
IC103
IC101
IC001
Q301
Q201
Q001
Q701
Q801
D303
D202
D101
L101
L102
L201
L202
L203
L301
L302
T001
PRIMARY
127-A
K-F00-431-11
TDK-T15V
CN1
CN2
CN3
CN4
CN7
CN8
RV101
RV102
RV103
RV201
RV301
PC001
PC002
TP1
TP2
C101
C102
C103
C401
C501
C601
C701
C801
RJ16
RJ57
+3V
FOR CONTINU
REPLACE ONLY

OWER BLOCK BOARD


nichicon JAPAN
PRIMARY
127-A
T001
CAUTION
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE ONLY WITH SAME TYPE AND RATINGS OF FUSE.
T3.15A L
250V~
(IEC)
F001
C001
RJ01
CN9
N
L
CN009
L006
(AC CORE)
AC INLET
220~240V
50Hz
Q001
G D S
RJ03
R010
D002
RJ04
TH001
D001
C018
C019
C020
C021
L002
R001
C004
C003
RJ02
C002
L001
C006
R004
R005
R006
RJ05
C007
R007
C008
R002
RJ06
R003
R021
D004
R020
C009
R009
RJ07
R008
D003
R011
R012
IC001
R016
R017
C013
R015
C014
R013
C012
R014
RJ08
RJ09
Q002
D006
R019
R018
C011
C010
D005
D007
RJ60
RJ61
C015
C016
PC001
PC002
RV101
R107
R118
R106
R104
D108
RJ15
D109
RY101
RJ16
D107
CN4
TP1
H
TP2
G
IC101
D103
C106
RJ18
RJ19
RJ20
C102
C103
C104
R127
D102
R102
RJ13
RJ14
C101
D101
R101
RJ12
L101
L102
Q201
RJ27
R201
D202
RJ28
RJ29
D201
L201
RJ26
R202
R203
R204
R119
Q102
R122
R121
D104
Q101
D105
R125
R126
RJ17
R103
RJ05
C105
R120
C201
C108
D203
R205
RJ25
R207
C207
IC201
R212
R219
RJ24
R217
C208
C209
RV201
Q203
Q202
R221
R218
R215
R214
R208
R211
C206
RJ23
R213
C204
R209
R210
C205
D110
Q106
Q105
D106
R108
RJ6
RJ1
RJ5
IC102
RV103
IC103
RV102
R117
C107
+3V
CN7
RJ21
RJ22
R109
R113
R112
R110
RJ58
RJ59
RJ56
RJ10
RJ11
R222
C203
L203
C202
RJ31
R220
RJ30
R303
R206
R302
L202
Q301
R301
RJ33
D301
L301
L302
RJ34
D303
IC601
RJ35
RJ38
C305
R318
CN8
R304
D302
R305
C301
RJ32
R317
R316
R315
R312
R313
R314
R308
R309
C304
IC301
RV301
C306
R311
C303
R307
C302
R306
R310
RJ51
RJ52
RJ53
RJ54
RJ55
CN2
CN1
CN3
RJ57
Q103
C109
R123
Q104
R124
2
3
4
5
6
7
8
9

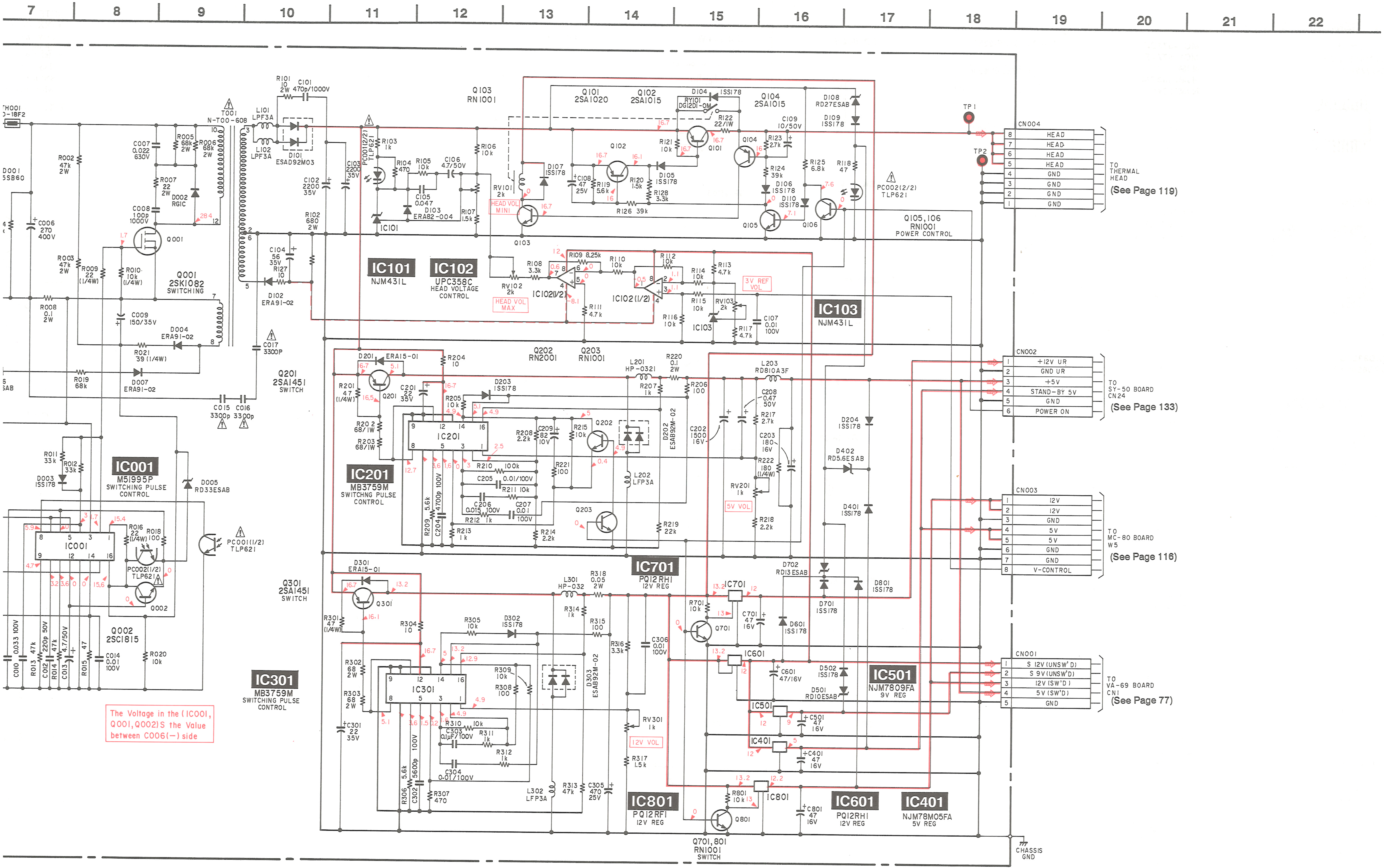
POWER BLOCK SCHEMATIC DIAGRAM

— Ref. No. POWER BLOCK: 6000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
AC INLET
220～240V 50Hz
L006 ESD-R-19DW
CN009
AC IN
L
N
CHASSIS GND
F001 3.15A/250V
C001 0.47 250V
L001 SU16V-08080
C002 2200p
C004 0.22 250V
C003 2200p
R001 330k (1/2W)
C021 2200p
C020 2200p
C019 2200p
C018 2200p
L002 SU20U-10200
TH001 8D-18F2
D001 D5SB60
R004 100k 2W
C006 270 400V
R017 68
D006 RD33ESAB
R002 47k 2W
R003 47k 2W
R009 22 (1/4W)
R010 10k (1/4W)
C007 0.022 630V
R005 68k 2W
R006 68k 2W
R007 22 2W
D002 RGIC
C008 100p 1000V
Q001 2SK1082 SWITCHING
R008 0.1 2W
C009 150/35V
D004 ERA91-02
R021 39 (1/4W)
R019 68k
D007 ERA91-02
C015 3300p
C016 3300p
C017 3300P
T001 N-T00-608
L101 LPF3A
L102 LPF3A
D101 ESAD92M03
R101 10 2W
C101 470p/1000V
C102 2200 35V
C103 2200 35V
C104 56 35V
R127 10
R102 680 2W
D102 ERA91-02
R011 33k
R012 33k
D003 1SS178
IC001 M51995P SWITCHING PULSE CONTROL
R016 22 (1/4W)
R018 100
PC002(1/2) TLP621
Q002 2SC1815
D005 RD33ESAB
PC001(1/2) TLP621
C011 0.033 100V
C010 0.033 100V
R013 47k
C012 220p 50V
R014 47k
C013 4.7/50V
R015 47
C014 0.01 100V
R020 10k
PC001(2/2) TLP621
R103 1k
R104 470
R105 10k
C106 4.7/50V
C105 0.047
D103 ERA82-004
IC101 NJM431L
R106 10k
R107 1.5k
IC102 UPC358C HEAD VOLTAGE CONTROL
RV101 2k HEAD VOL MINI
Q103 RN1001
D107 1SS178
Q101 2SA1020
Q102 2SA1015
D104 1SS178
RY101 DG12D1-0M
R122 22/1W
R121 10k
C108 47 25V
R119 5.6k
R120 1.5k
D105 1SS178
R128 3.3k
R126 39k
Q104 2SA1015
C109 10/50V
R123 2.7k
R124 39k
D106 1SS178
D110 1SS178
Q105
Q106
D108 RD27ESA
D109 1SS178
R125 6.8k
R108 3.3k
RV102 2k HEAD VOL MAX
IC102(1/2)
R109 8.25k
R110 10k
R111 4.7k
R112 10k
R114 10k
R113 4.7k
R115 10k
R116 10k
IC103
RV103 2k
R117 4.7k
C107 0.01 100V
3V REF VOL
Q202 RN2001
Q203 RN1001
D201 ERA15-01
R204 10
Q201 2SA1451 SWITCH
R201 47 (1/4W)
C201 22 35V
R205 10k
D203 1SS178
R202 68/1W
R203 68/1W
IC201 MB3759M SWITCHING PULSE CONTROL
R208 2.2k
C209 82 10V
R215 10k
R210 100k
C205 0.01/100V
R211 10k
C206 0.015 100V
C207 0.01 100V
R212 1k
R221 100
R209 5.6k
C204 4700p 100V
R213 1k
R214 2.2k
L201 HP-0321
R220 0.1 2W
R207 1k
R206 100
D202 ESAB92M-02
C202 1500 16V
L202 LFP3A
R219 22k
L203 RD810A3F
C208 0.47 50V
R217 2.7k
C203 180 16V
R222 180 (1/4W)
RV201 1k 5V VOL
R218 2.2k
IC701 PQ12RH1 12V REG
D702 RD13ESAB
D701 1SS178
D301 ERA15-01
Q301 2SA1451 SWITCH
R301 47 (1/4W)
R304 10
R305 10k
D302 1SS178
L301 HP-032
R318 0.05 2W
R314 1k
R315 100
R316 3.3k
C306 0.01 100V
D303 ESAB92M-02
R302 68 2W
R303 68 2W
IC301 MB3759M SWITCHING PULSE CONTROL
R309 10k
R308 100
R310 10k
C303 0.1μF/100V
R311 1k
R312 1k
C304 0.01/100V
C301 22 35V
R306 5.6k
C302 5600p 100V
R307 470
L302 LFP3A
R313 47k
C305 470 25V
RV301 1k 12V VOL
R317 1.5k
R701 10k
Q701
C701 47 16V
D601 1SS178
IC601
C601 47/16V
D502 1SS178
D501 RD10ESAB
IC501
C501 47 16V
IC401
C401 47 16V
IC801 PQ12RF1 12V REG
R801 10k
Q801
C801 47 16V
Q701,801 RN1001 SWITCH
NJM43
SWITCHING POWER BLOCK

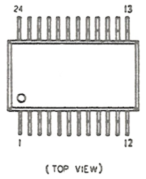
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

The Voltage in the (IC001, Q001,Q002)S the Value between C006(−) side

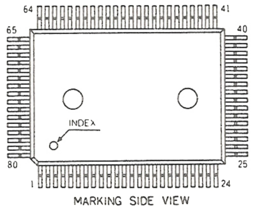

7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
IC001
M51995P
SWITCHING PULSE CONTROL
Q001
2SK1082
SWITCHING
Q002
2SC1815
T001
N-T00-608
IC101
NJM431L
IC102
UPC358C
HEAD VOLTAGE CONTROL
IC102(1/2)
IC102(2/2)
IC103
NJM431L
Q101
2SA1020
Q102
2SA1015
Q103
RN1001
Q104
2SA1015
Q105,106
RN1001
POWER CONTROL
RY101
DG12D1-0M
HEAD VOL MINI
HEAD VOL MAX
3V REF VOL
PC001(2/2)
TLP621
PC001(1/2)
TLP621
PC002(1/2)
TLP621
PC002(2/2)
TLP621
TP1
TP2
CN004
HEAD
HEAD
HEAD
HEAD
GND
GND
GND
GND
TO THERMAL HEAD
(See Page 119)
IC201
MB3759M
SWITCHING PULSE CONTROL
Q201
2SA1451
SWITCH
Q202
RN2001
Q203
RN1001
5V VOL
CN002
+12V UR
GND UR
+5V
STAND-BY 5V
GND
POWER ON
TO SY-50 BOARD CN24
(See Page 133)
CN003
12V
12V
GND
5V
5V
GND
GND
V-CONTROL
TO MC-80 BOARD W5
(See Page 116)
IC301
MB3759M
SWITCHING PULSE CONTROL
Q301
2SA1451
SWITCH
12V VOL
IC701
PQ12RH1
12V REG
IC801
PQ12RF1
12V REG
IC601
PQ12RH1
12V REG
IC501
NJM7809FA
9V REG
IC401
NJM78M05FA
5V REG
Q701,801
RN1001
SWITCH
CN001
S 12V (UNSW'D)
S 9V (UNSW'D)
12V (SW'D)
5V (SW'D)
GND
TO VA-69 BOARD CN1
(See Page 77)
CHASSIS GND
The Voltage in the (IC001, Q001, Q002)S the Value between C006(−) side

6-3. SEMICONDUCTORS

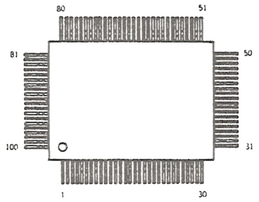
CXD1175AM
IDT6116SA250-T
M51272FP


24
13
1
12
(TOP VIEW)

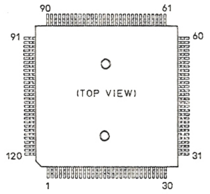
CXD8301Q


64
41
65
40
INDEX
80
25
1
24
MARKING SIDE VIEW

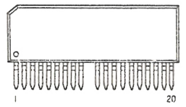
CXD8328Q
μPD65013GF-407-3BA


80
51
81
50
100
31
1
30

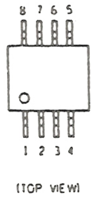
HDC443V2


90
61
91
60
(TOP VIEW)
120
31
1
30

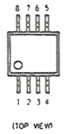
HM51H240AZ7



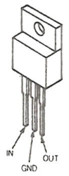
LM358PS


8 7 6 5
1 2 3 4
(TOP VIEW)

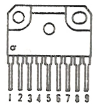
MC14576BF
MC14577AF
NJM2229M
NJM2233BM
NJM2234M


8 7 6 5
1 2 3 4
(TOP VIEW)

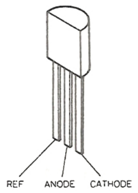
M5F78M05L
NJM78M05FA
NJM78M09FA



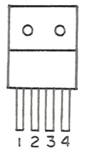
M54544AL



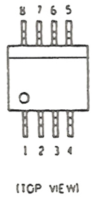
NJM431L


REF
ANODE
CATHODE

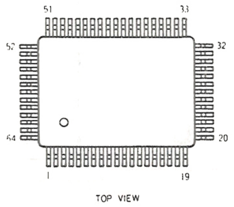
PQ12RF1
PQ12RH1



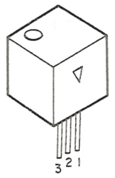
TC4W53F
TC7W04F
TC7W08F


8 7 6 5
1 2 3 4
(TOP VIEW)

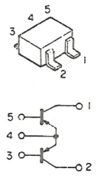
TMP91C640F-2351


51
33
52
32
44
20
1
19
TOP VIEW

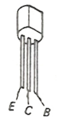
SBX1619-51



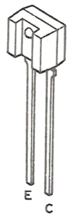
FMS1



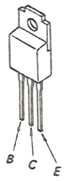
RN1001
2SA1015-0
2SC1815



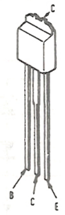
TPS607A



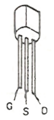
2SA1451



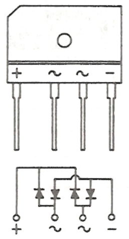
2SD1802-S



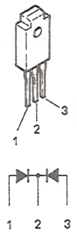
2SK1014



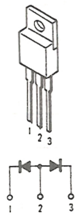
D5SB40



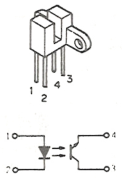
ESAB92M-02



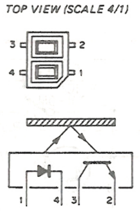
ESAD92M-03



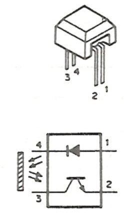
GP-1S03



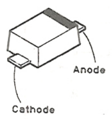
GP-2S04-B


TOP VIEW (SCALE 4/1)
3
2
4
1
1 4 3 2

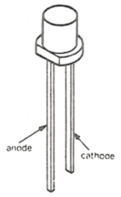
GP-2S05



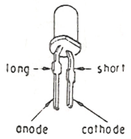
1T33


Anode
Cathode

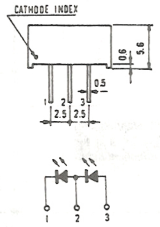
GL3KG47


anode
cathode

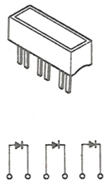
GL-3PR9


long
short
anode
cathode

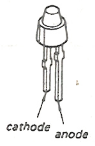
LD-001MG


CATHODE INDEX
1 2 3

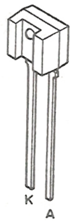
LD-701DU



SLR-34VP3


cathode
anode

TLN-107A



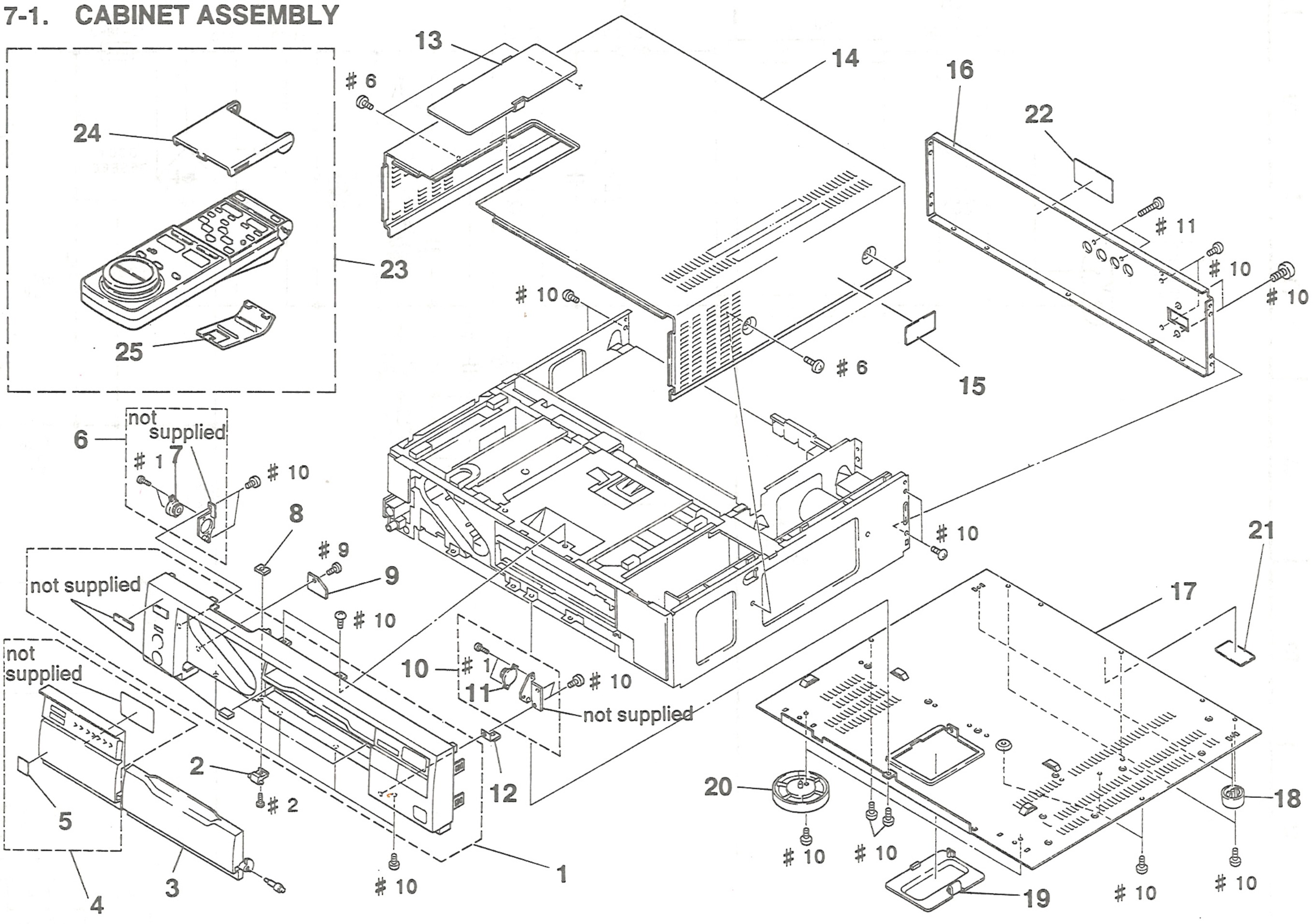
SECTION 7
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

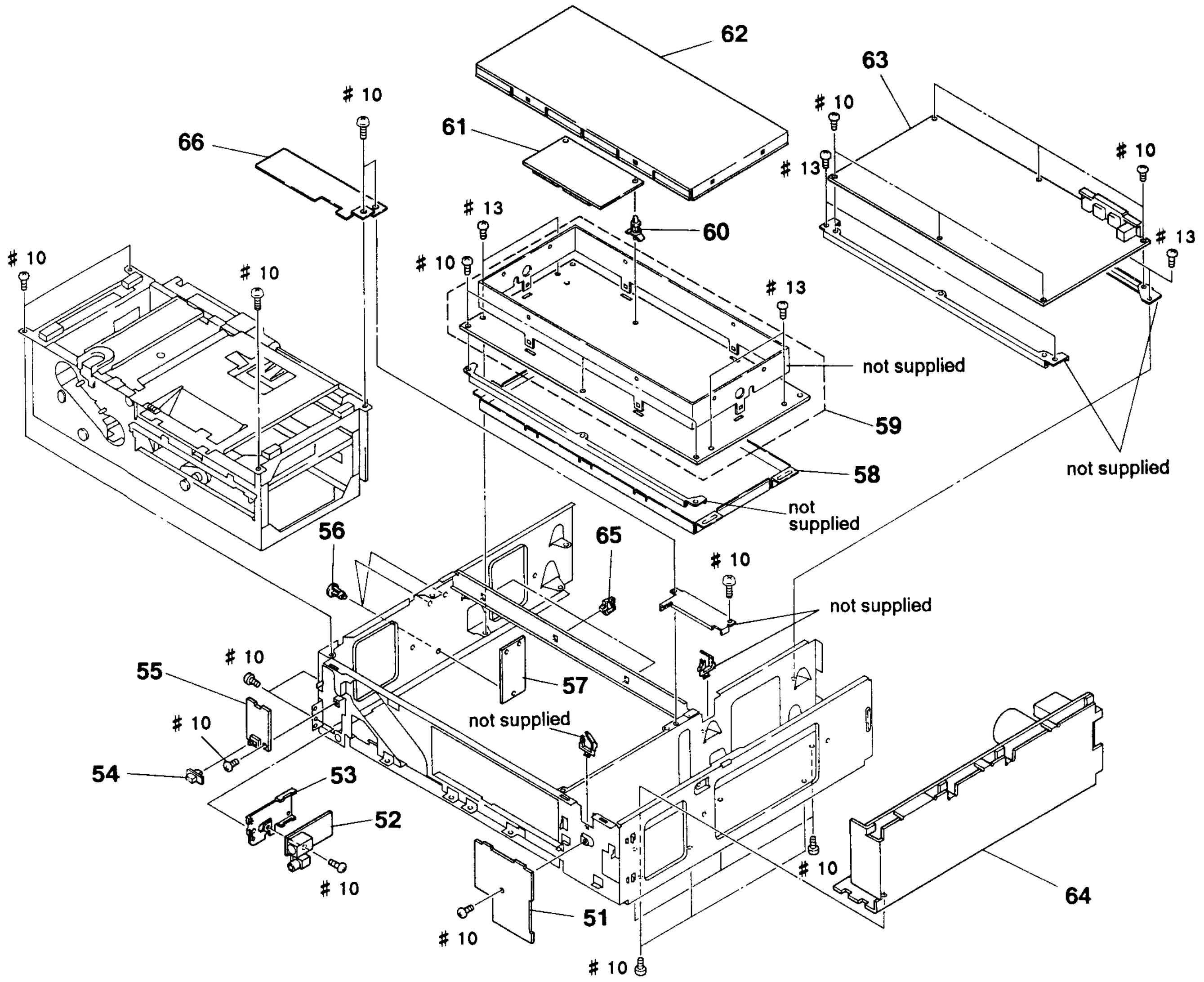
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CABINET ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3941-678-2	PANEL BLOCK ASSY, FRONT	
2	3-944-693-01	HOLDER, DOOR	
3	1-466-613-21	SWITCH BLOCK, CONTROL	
4	X-3941-697-1	DOOR UNIT ASSY, RIBBON	
5	3-703-710-41	STICKER, SONY SYMBOL (12)	
6	X-3941-043-2	HOLDER ASSY, RIBBON DOOR	
7	3-712-786-01	DAMPER, OIL	
8	3-944-694-01	STOPPER	
* 9	1-641-074-11	CK-51 BOARD	
10	X-3941-042-1	HOLDER ASSY, PANEL	
11	3-712-786-41	DAMPER, OIL	
12	3-944-695-02	PLATE, GROUND	
* 13	3-737-950-31	LID, UPPER	
14	X-3941-241-1	COVER ASSY, TOP	
* 15	3-703-043-51	LABEL, CAUTION, MAIN (UK, Australian)	
* 16	3-948-203-02	FRAME, REAR	
* 17	3-944-685-01	PANEL, UNDER	
18	X-3701-069-0	FOOT ASSY, M.F	
* 19	X-3941-564-1	LID BLOCK ASSY, LOWER	
20	X-3735-007-1	FOOT ASSY	
* 21	3-703-082-01	LABEL, CAUTION (UK, Australian)	
* 22	3-949-089-01	LABEL, MODEL NUMBER (AE5)(AEP)	
23	1-465-977-32	REMOTE COMMANDER (RMT-7)	
24	3-946-903-11	COVER	
25	3-943-974-01	COVER, BATTERY	

7-2. CHASSIS ASSEMBLY

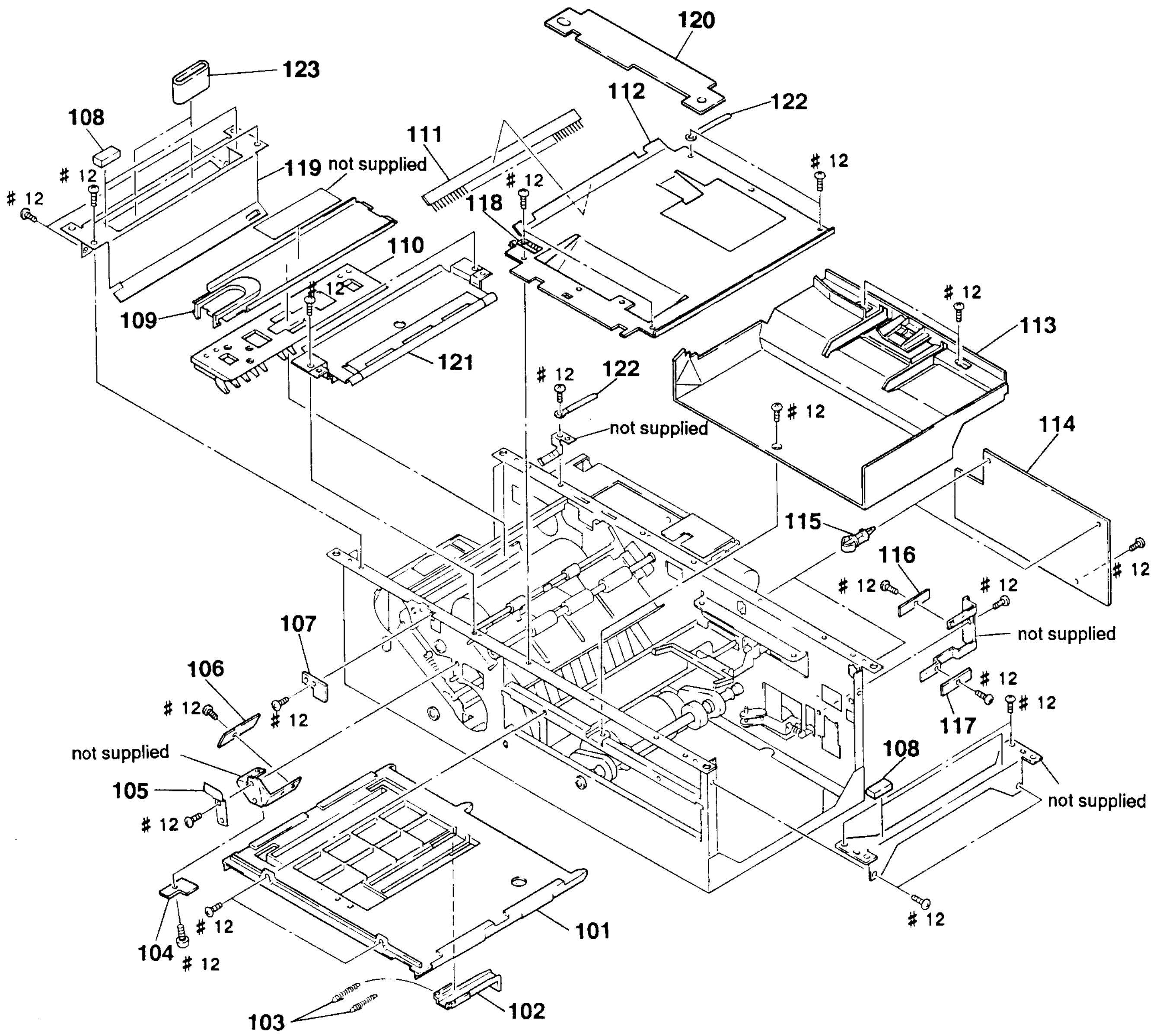

62
63
# 10
61
66
# 10
# 13
# 10
# 13
60
# 10
# 10
# 10
# 13
# 13
not supplied
59
58
not supplied
not supplied
56
65
# 10
not supplied
# 10
55
57
# 10
not supplied
54
53
52
# 10
# 10
64
51
# 10
# 10

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 51	1-641-073-11	KY-12 BOARD	
* 52	A-7071-683-A	CN-54 BOARD, COMPLETE	
* 53	3-944-686-01	GUIDE (CN), PC BOARD	
54	3-944-674-01	KNOB, SLIDE	
* 55	1-641-072-11	PW-97 BOARD	
* 56	4-912-181-11	SUPPORT, PC	
* 57	1-641-077-11	CK-55 BOARD	
* 58	3-948-204-01	LID, LOWER, SHIELD CASE, MHC (AEP, UK, Australian)	
* 59	A-7063-159-A	MC-80 BOARD, COMPLETE	

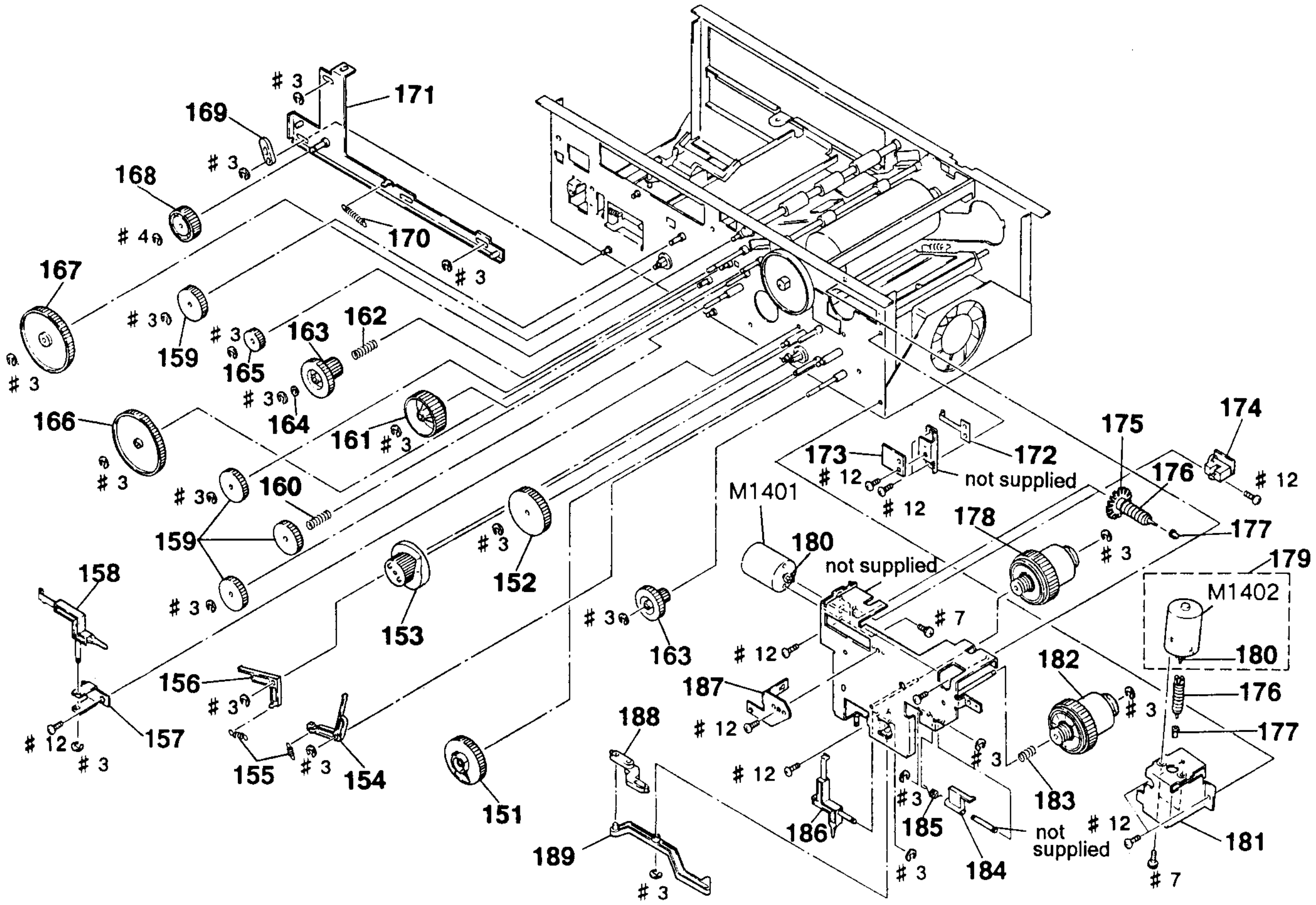
Ref. No.	Part No.	Description	Remark
* 60	3-703-353-04	SUPPORT, PC BOARD	
* 61	A-7062-924-A	HC-10 BOARD, COMPLETE	
* 62	3-944-689-01	LID, UPPER, MHC SHIELD CASE	
* 63	A-7063-160-A	VA-69 BOARD, COMPLETE (AEP, UK, Australian)	
* 63	A-7063-247-A	VA-69 BOARD, COMPLETE (E)	
⚠64	1-413-759-11	POWER BLOCK (SWITCHING REGULATOR)	
* 65	3-694-225-01	CLAMP	
* 66	3-948-592-01	PLATE, SHIELD (AEP, UK, Australian)	

7-3. MECHANISM CHASSIS ASSEMBLY (1)


120
123
112
122
108
# 12
111
# 12
119 not supplied
# 12
# 12
118
# 12
110
109
# 12
113
121
# 12
122
not supplied
# 12
114
115
116
# 12
# 12
not supplied
# 12
107
106
# 12
# 12
not supplied
105
# 12
# 12
# 12
117
108
not supplied
# 12
# 12
104
# 12
101
103
102

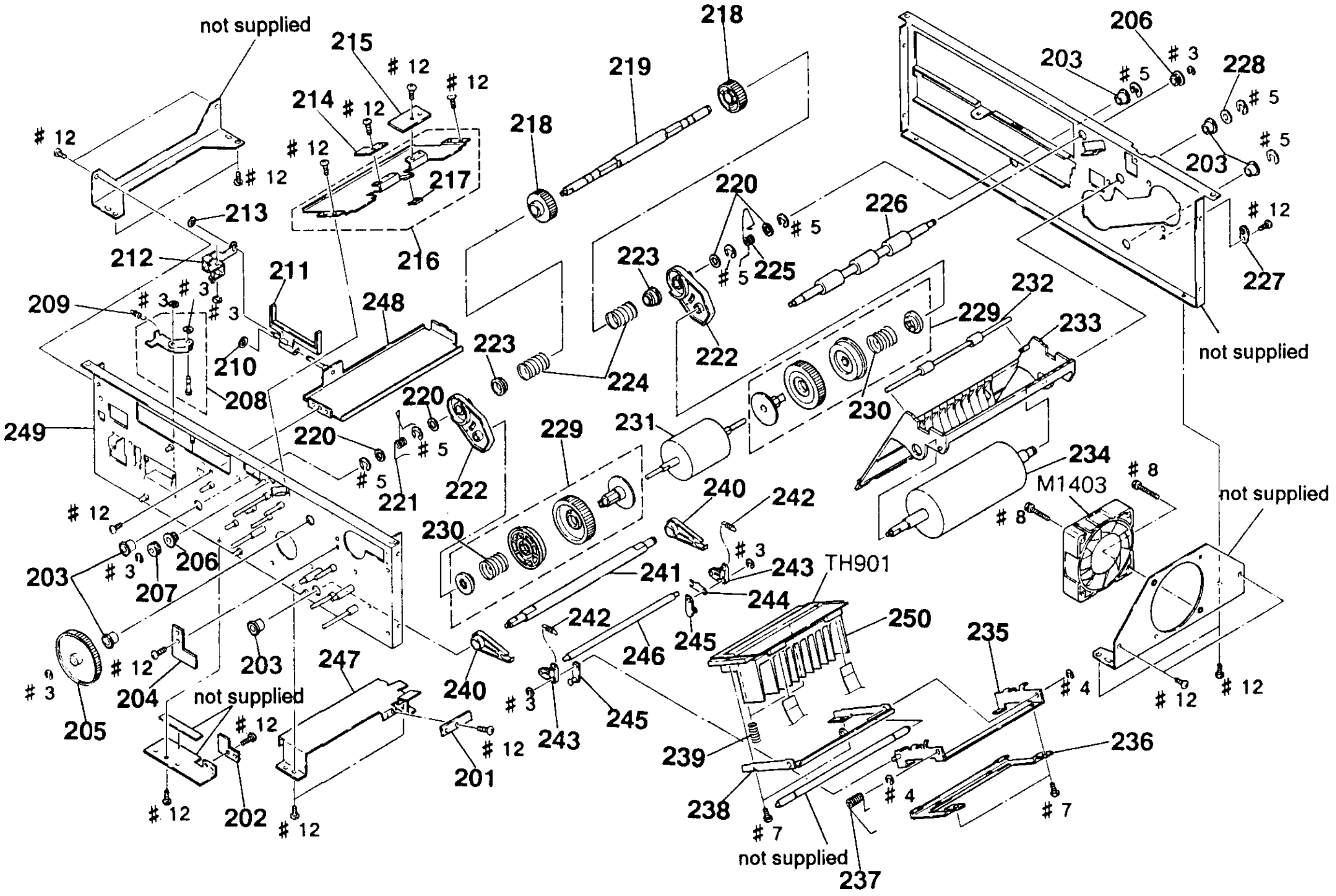
Ref. No.	Part No.	Description	Remark
* 101	X-3737-829-3	GUIDE BLOCK ASSY, TRAY	
* 102	3-737-861-01	ARM, TRAY EJECT	
103	3-737-862-01	SPRING, TENSION	
* 104	1-630-979-11	SW-4 BOARD	
* 105	3-737-810-01	SPRING	
* 106	1-630-986-11	PTC-10 BOARD	
* 107	1-630-970-11	SW-9 BOARD	
108	9-911-841-XX	CUSHION	
* 109	X-3737-818-6	RETAINER BLOCK ASSY, GUIDE (S)	
110	A-8262-123-A	GUIDE (S) ASSY	
111	3-725-667-01	BRUSH	
112	3-944-770-01	GUIDE, UPPER	
* 113	3-737-961-03	TRAY	
* 114	A-7063-140-A	SY-50 BOARD, COMPLETE	
115	3-680-767-00	SUPPORT, PC	
* 116	1-630-987-11	PTC-11 BOARD	
* 117	1-630-975-11	PTC-9 BOARD	
118	3-944-769-01	SPRING, GROUND	
* 119	3-737-947-02	GUIDE (T), RIBBON	
120	3-948-309-01	COVER, CORD	
121	X-3737-819-7	GUIDE BLOCK ASSY	
* 122	3-701-822-00	HOLDER, WIRE	
123	1-543-950-11	CORE, FERRITE	

7-4. MECHANISM CHASSIS ASSEMBLY (2)


#3
171
169
#3
168
#4
170
#3
167
#3
159
#3
165
163
162
#3
164
#3
166
161
#3
#3
#3
160
159
#3
158
#3
153
152
#3
163
156
#3
157
#12
#3
155
#3
154
151
188
187
#12
#12
189
#3
173
#12
172
not supplied
#12
M1401
180
not supplied
#7
#12
186
#3
185
#3
184
not supplied
#12
#7
174
175
176
#12
178
177
#3
179
M1402
180
182
176
#3
177
#3
183
181

Ref. No.	Part No.	Description	Remark
151	3-737-922-01	IDLER, HEAD	
152	3-737-807-01	GEAR, HEAD DRIVING	
153	X-3737-802-1	GEAR BLOCK ASSY, CAM	
154	3-737-820-01	BRAKE (S)	
155	3-737-822-01	SPRING, TENSION	
156	3-737-821-01	BRAKE (T)	
* 157	3-737-870-01	BEARING, CHANGE ARM	
158	X-3737-808-1	ARM (A) BLOCK ASSY, CHANGE	
159	3-737-817-01	GEAR, CHANGE	
160	3-737-819-01	SPRING, COMPRESSION	
161	3-737-814-01	GEAR, IDLER	
162	3-737-816-01	SPRING, COMPRESSION	
163	3-737-818-01	WHEEL, WORM	
164	3-701-439-11	WASHER	
165	3-737-815-01	GEAR, IDLER	
166	3-737-823-01	GEAR, IDLER	
167	3-737-813-01	GEAR, DRIVING	
168	3-737-985-01	GEAR, CLUTCH	
169	3-737-827-01	PLATE, STOP, PUSH	
170	3-737-914-01	SPRING, TENSION	
* 171	X-3737-825-1	LINK BLOCK ASSY	
172	3-737-824-03	SPRING	
* 173	1-630-978-11	S-12 BOARD	
* 174	1-630-981-11	SW-6 BOARD	
175	3-745-706-01	ENCORDER	
176	X-3737-811-1	WORM BLOCK ASSY	
177	3-737-880-01	CAP, WORM SHAFT	
178	A-7081-918-A	LEMITER (T) ASSY	
179	A-7040-276-A	MOTOR ASSY, HEAD DRIVING	
180	3-737-886-01	TABLE, WORM	
181	3-737-934-01	BRACKET (H), MOTOR	
* 182	A-7081-917-A	LIMITER (S) ASSY	
183	3-737-881-01	SPRING, COMPRESSION	
184	3-737-878-01	LOCK, LIMITER	
185	3-737-875-01	SPRING	
186	X-3737-810-1	ARM (B) BLOCK ASSY, CHANGE	
* 187	3-737-978-01	BEARING, WORM	
188	3-737-876-01	ARM (S), PLATEN RELEASE	
189	X-3737-809-1	ARM BLOCK ASSY, RELEASE	
M1401	1-541-309-11	MOTOR, L (RF-370C)(PLATEN DRIVING)	
M1402	1-541-309-11	MOTOR, L (RF-370C)(T HEAD UP/DOWN)	

7-5. MECHANISM CHASSIS ASSEMBLY (3)


not supplied
215
# 12
# 12
214
# 12
# 12
# 12
# 12
218
219
218
206
# 3
203
# 5
228
# 5
# 5
203
# 12
227
217
216
213
212
211
248
220
# 5
226
223
# 5
225
232
229
233
not supplied
209
# 3
# 3
# 3
210
208
223
224
222
249
220
220
# 5
# 5
221
222
229
231
230
234
# 8
M1403
# 8
not supplied
240
242
# 12
203
# 3
206
207
230
241
# 3
243
TH901
244
242
250
235
246
245
# 12
203
247
# 4
# 12
# 12
# 3
204
not supplied
# 12
240
# 3
245
205
243
# 12
201
239
236
238
# 4
# 7
# 12
202
# 12
# 7
not supplied
237

Ref. No.	Part No.	Description	Remark
* 201	1-630-974-11	PTC-8 BOARD	
* 202	1-630-988-11	SW-10 BOARD	
203	3-737-805-01	BEARING (LEFT)	
* 204	1-630-982-11	SW-7 BOARD	
205	3-737-806-01	GEAR, DRIVING	
206	2-430-460-02	BEARING	
207	3-737-811-01	GEAR, ROLLER	
* 208	A-8262-101-A	PLATE ASSY, LOCK	
209	3-737-826-01	SPRING, TENSION	
210	3-669-596-00	WASHER (2.3), STOPPER	
211	X-3737-807-2	ARM BLOCK ASSY	
* 212	X-3737-804-1	LINK BLOCK ASSY, ARM	
213	3-669-465-00	WASHER (1.5), STOPPER	
* 214	1-630-969-11	SW-8 BOARD	
* 215	1-630-980-11	SW-5 BOARD	
* 216	X-3737-815-3	GUIDE BLOCK ASSY	
217	3-737-865-03	COVER, PINCH ROLLER SPRING (M)	
218	3-737-982-01	GEAR, DRIVING SHAFT	
219	3-737-991-01	SHAFT, DRIVING, ROLLER	
220	3-701-444-21	WASHER, 6	
221	3-737-986-03	SPRING (RIGHT), TORSION	
222	3-737-981-01	ARM, PAPER ROLLER	
223	X-3737-828-1	HOUSING BLOCK ASSY	
224	3-737-990-01	SPRING, COMPRESSION	
225	3-737-987-03	SPRING (LEFT), TORSION	
226	3-737-921-02	ROLLER	
* 227	3-737-809-01	BEARING, HEAD GUIDE	
228	3-701-444-11	WASHER, 6	
229	A-8262-125-A	LIMITER ASSY	
230	3-737-988-01	SPRING, COMPRESSION	
231	3-737-992-01	ROLLER, PAPER	
232	3-737-920-01	PINCH ROLLER (M)	
* 233	X-3745-702-3	GUIDE (M) BLOCK ASSY	
234	3-742-102-02	PLATEN	
* 235	X-3737-817-1	GUIDE (M) BLOCK ASSY, HEAD	
* 236	3-737-926-01	RETAINER, SPRING HEAD	
* 237	3-737-808-01	SPRING	
* 238	3-737-976-01	GUIDE (S), HEAD	
239	3-737-975-01	SPRING, COMPRESSION	
240	3-725-688-01	ARM (A), HEAD U/D	
241	3-737-925-02	SHAFT, HEAD DRIVING	
242	3-737-850-01	SPRING, TENSION	
243	3-737-849-01	ARM, RIBBON ROLLER	
244	3-737-852-02	PLATE, GROUND, ROLLER	
* 245	X-3737-805-1	ARM BLOCK ASSY, HEAD DRIVING	
246	3-737-848-01	ROLLER, RIBBON	
* 247	3-737-924-01	GUIDE (B), RIBBON	
248	X-3737-816-2	SUPPORT BLOCK ASSY	
* 249	X-3737-822-4	PLATE (U) BLOCK ASSY, SIDE	
* 250	3-742-101-01	HEAT SINK	
M1403	1-541-684-12	MOTOR, DC (FAN MOTOR)	
TH901	1-543-774-11	HEAD, THERMAL (TH66207)	

CK-51 **CK-55**
CN-54 **HC-10**

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Hardware (# mark) list is given in the last of this parts list.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description	Remark
*	1-641-074-13	CK-51 BOARD (Ref.No 3,000 Series)	
		***********	
		(CONNECTOR)	
* CN401	1-563-969-11	CONNECTOR, F.P.C 7P	
CN402	1-506-485-11	PIN, CONNECTOR 6P	
		**	
*	1-641-077-13	CK-55 BOARD (Ref.No 5,000 Series)	
		***********	
		(CONNECTOR)	
CN302	1-506-486-11	PIN, CONNECTOR 7P	
		(FLAT CABLE)	
W307	1-949-137-21	HARNESS (SH-53)	
		**	
*	A-7071-683-A	CN-54 BOARD, COMPLETE	
		*********************	
		(Ref.No 3,000 Series)	
		(JACK)	
CNJ101	1-566-980-31	CONNECTOR, ROUND TYPE 4P	
CNJ102	1-568-550-11	JACK, PIN 1P	
		(DIODE)	
D101	8-719-108-12	DIODE RD9.1E-W	
D102	8-719-108-12	DIODE RD9.1E-W	
D103	8-719-108-12	DIODE RD9.1E-W	
		**	
*	A-7062-924-A	HC-10 BOARD, COMPLETE	
		*********************	
		(Ref.No 3,000 Series)	
		(CAPACITOR)	
C001	1-124-584-00	ELECT 100uF 20% 10V	
C002	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C003	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C004	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C005	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C006	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C007	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C008	1-124-584-00	ELECT 100uF 20% 10V	
C009	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C010	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C011	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C012	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
		(CONNECTOR)	
CN001	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P	
CN002	1-580-722-11	CONNECTOR, BOARD TO BOARD 28P	
		(FILTER)	
FL001	1-236-738-11	FILTER, EMI	
FL002	1-236-738-11	FILTER, EMI	
FL003	1-236-738-11	FILTER, EMI	
FL004	1-236-738-11	FILTER, EMI	
FL005	1-236-738-11	FILTER, EMI	
		(IC)	
IC001	8-759-154-84	IC HDC443V2	
IC002	8-759-053-58	IC IDT6116SA25S0	
IC003	8-759-053-58	IC IDT6116SA25S0	
IC004	8-759-062-13	IC uPD23C1000AG-360	
IC005	8-759-926-77	IC SN74HC541ANS	
IC006	8-759-983-69	IC LM358PS	
		(RESISTOR)	
R001	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R002	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R003	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R004	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R005	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R006	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R007	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R008	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R009	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R010	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R011	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R015	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R016	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R017	1-216-045-00	METAL CHIP 680 5% 1/10W	
R018	1-216-043-00	METAL CHIP 560 5% 1/10W	
R019	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R020	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R021	1-216-043-00	METAL CHIP 560 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R022	1-216-045-00	METAL CHIP	680	5%	1/10W	
R023	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R024	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R025	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R026	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R027	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R028	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R029	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R030	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R031	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R032	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R033	1-216-045-00	METAL CHIP	680	5%	1/10W	
R034	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R035	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R036	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R037	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R038	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R039	1-216-001-00	METAL CHIP	10	5%	1/10W	
R040	1-216-001-00	METAL CHIP	10	5%	1/10W	
R041	1-216-001-00	METAL CHIP	10	5%	1/10W	
R042	1-216-001-00	METAL CHIP	10	5%	1/10W	
R043	1-216-001-00	METAL CHIP	10	5%	1/10W	
R044	1-216-001-00	METAL CHIP	10	5%	1/10W	
R045	1-216-001-00	METAL CHIP	10	5%	1/10W	
R046	1-216-001-00	METAL CHIP	10	5%	1/10W	
R047	1-216-001-00	METAL CHIP	10	5%	1/10W	
R048	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R049	1-216-089-00	METAL CHIP	47K	5%	1/10W	
		(SWITCH)				
S801	1-570-845-11	SWITCH, SLIDE				
		(THERMISTOR)				
TH001	1-807-796-11	THERMISTOR	10K			
		(VIBRATOR)				
X001	1-567-927-11	VIBLATOR, CERAMIC (16MHz)				

****

* 1-641-073-13 KY-12 BOARD (Ref.No 6,000 Series)

****

Ref. No.	Part No.	Description				Remark
	1-562-719-11	SOCKET, CONNECTOR 10P				
		(BUZZER)				
BZ1	1-529-069-11	BUZZER, PIEZOELECTRIC				
		(CAPACITOR)				
C001	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C002	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C003	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C004	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C005	1-124-589-11	ELECT	47uF	20%	16V	
C006	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C007	1-124-584-00	ELECT	100uF	20%	10V	
C008	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C009	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
		(DIODE)				
D001	8-719-018-50	DIODE	LD-701DU			
D002	8-719-948-07	LED	LD-001MG			
D003	8-719-948-07	LED	LD-001MG			
D004	8-719-948-07	LED	LD-001MG			
		(IC)				
IC001	8-759-987-65	IC	BA6250F			
IC002	8-741-100-63	IC	SBX1619-51			
IC003	8-759-144-85	IC	uPC1555G2			
		(TRANSISTOR)				
Q001	8-729-901-04	TRANSISTOR	DTA114EK			
Q002	8-729-900-53	TRANSISTOR	DTC114EK			
Q003	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
		(RESISTOR)				
R001	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R002	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R003	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R004	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R005	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R006	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R007	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R008	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R009	1-216-029-00	METAL CHIP	150	5%	1/10W	
R010	1-216-021-00	METAL CHIP	68	5%	1/10W	
R011	1-216-021-00	METAL CHIP	68	5%	1/10W	
R012	1-216-021-00	METAL CHIP	68	5%	1/10W	
R013	1-216-017-00	METAL CHIP	47	5%	1/10W	
R014	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R015	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R016	1-216-029-00	METAL CHIP	150	5%	1/10W	
R017	1-216-029-00	METAL CHIP	150	5%	1/10W	
R018	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R019	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R020	1-216-025-00	METAL CHIP	100	5%	1/10W	
R021	1-216-049-00	METAL CHIP	1K	5%	1/10W	
		(SWITCH)				
S001	1-570-472-11	SWITCH, KEY BOARD (PRINT)				

Ref. No.	Part No.	Description	Remark
S002	1-570-472-11	SWITCH, KEY BOARD (CAPTURE)	
S003	1-570-472-11	SWITCH, KEY BOARD (CAPTURE MODE)	
S004	1-570-472-11	SWITCH, KEY BOARD (MONITOR MEMORY)	

****

* A-7063-159-A MC-80 BOARD, COMPLETE
****
(Ref.No 2,000 Series)

〈 CAPACITOR 〉

Ref. No.	Part No.	Description				Remark
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C102	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C103	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C104	1-124-589-11	ELECT	47uF	20%	16V	
C106	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C107	1-124-589-11	ELECT	47uF	20%	16V	
C108	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C109	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C120	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	
C201	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C202	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C203	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C204	1-124-589-11	ELECT	47uF	20%	16V	
C206	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C209	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C220	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C303	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C304	1-124-589-11	ELECT	47uF	20%	16V	
C306	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C309	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C320	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	
C401	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C402	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C403	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C404	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C405	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C406	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C407	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C408	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C409	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C410	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C411	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C412	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C413	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C414	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C416	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C417	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C418	1-124-589-11	ELECT	47uF	20%	16V	
C419	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C420	1-124-589-11	ELECT	47uF	20%	16V	
C421	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C501	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C502	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C503	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C504	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C505	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C506	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C507	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C508	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C509	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	
C510	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	
C511	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C513	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C514	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C515	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C516	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C517	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C518	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C519	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C520	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C521	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C522	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C523	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C524	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C525	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C526	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C527	1-124-589-11	ELECT	47uF	20%	16V	
C528	1-124-589-11	ELECT	47uF	20%	16V	
C542	1-124-589-11	ELECT	47uF	20%	16V	
C543	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C544	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C545	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C601	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C602	1-126-101-11	ELECT	100uF	20%	16V	
C605	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C606	1-131-381-00	TANTALUM	47uF	10%	10V	
C607	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C608	1-124-589-11	ELECT	47uF	20%	16V	
C609	1-124-589-11	ELECT	47uF	20%	16V	
C610	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	

〈 CONNECTOR 〉

Ref. No.	Part No.	Description	Remark
CN001	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN002	1-580-723-11	CONNECTOR, BOARD TO BOARD 28P	
CN003	1-562-719-11	SOCKET, CONNECTOR 10P	

〈 TRIMMER 〉

Ref. No.	Part No.	Description		Remark
CT501	1-141-245-00	CAP, TRIMMER	30PF	

Ref. No.	Part No.	Description	Remark
		(DIODE)	
D101	8-719-800-76	DIODE 1SS226	
D201	8-719-800-76	DIODE 1SS226	
D301	8-719-800-76	DIODE 1SS226	
D501	8-719-800-76	DIODE 1SS226	
		(DELAY LINE)	
DL501	8-759-507-10	IC DS1000S-75	
DL502	8-759-503-50	IC DS1000S-50-T1	
		(FILTER)	
EM105	1-236-743-21	FILTER, EMI	
EM601	1-236-743-21	FILTER, EMI	
EM602	1-236-743-21	FILTER, EMI	
EM603	1-236-743-21	FILTER, EMI	
EM604	1-236-743-21	FILTER, EMI	
EM605	1-236-743-21	FILTER, EMI	
EM606	1-236-743-21	FILTER, EMI	
EM607	1-236-743-21	FILTER, EMI	
EM608	1-236-743-21	FILTER, EMI	
EM609	1-236-743-21	FILTER, EMI	
EM610	1-236-743-21	FILTER, EMI	
EM611	1-236-743-21	FILTER, EMI	
EM801	1-236-743-21	FILTER, EMI	
		(IC)	
IC101	8-752-334-55	IC CXD1175AM	
IC102	8-759-053-58	IC IDT6116SA25SO	
IC201	8-752-334-55	IC CXD1175AM	
IC202	8-759-053-58	IC IDT6116SA25SO	
IC301	8-752-334-55	IC CXD1175AM	
IC302	8-759-053-58	IC IDT6116SA25SO	
IC401	8-759-154-50	IC CXD8301Q	
IC402	8-759-154-50	IC CXD8301Q	
IC403	8-759-154-50	IC CXD8301Q	
IC404	8-759-154-50	IC CXD8301Q	
IC405	8-759-154-50	IC CXD8301Q	
IC406	8-759-154-50	IC CXD8301Q	
IC407	8-752-032-93	IC CXA1260Q-Z	
IC408	8-759-051-58	IC uPD23C1001EC-573	
IC409	8-759-051-59	IC uPD23C1001EC-574	
IC410	8-759-038-00	IC MC74HC574AF	
IC411	8-759-232-58	IC TC74HC139AF	
IC501	8-759-043-61	IC HM514400AZ7	
IC502	8-759-043-61	IC HM514400AZ7	
IC503	8-759-043-61	IC HM514400AZ7	
IC504	8-759-043-61	IC HM514400AZ7	
IC505	8-759-043-61	IC HM514400AZ7	
IC506	8-759-043-61	IC HM514400AZ7	
IC507	8-759-114-07	IC uPD65013GF-407-3BA	

Ref. No.	Part No.	Description	Remark
IC508	8-759-114-09	IC uPD65006GF-250-3B8	
IC509	8-759-053-96	IC CXD8328Q	
IC510	8-759-069-24	IC HD6435328RB40F	
IC512	8-759-992-78	IC 74F257ASJ-T5L	
IC513	8-759-140-94	IC CXD1332P	
IC514	8-759-948-01	IC 74F04SJ	
IC515	8-759-989-03	IC 74F32SJ	
IC516	8-759-053-60	IC 74F86SJ-L5	
IC517	8-759-989-01	IC 74F08SJ	
		(COIL)	
L601	1-412-525-21	INDUCTOR 10uH	
L602	1-412-525-21	INDUCTOR 10uH	
L603	1-412-525-21	INDUCTOR 10uH	
		(TRANSISTOR)	
Q101	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q201	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q301	8-729-100-66	TRANSISTOR 2SC1623-L6	
		(RESISTOR)	
R101	1-216-041-00	METAL CHIP 470 5% 1/10W	
R102	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R120	1-216-033-00	METAL CHIP 220 5% 1/10W	
R121	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R122	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R201	1-216-041-00	METAL CHIP 470 5% 1/10W	
R202	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R220	1-216-033-00	METAL CHIP 220 5% 1/10W	
R221	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R222	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R301	1-216-041-00	METAL CHIP 470 5% 1/10W	
R302	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R320	1-216-033-00	METAL CHIP 220 5% 1/10W	
R321	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R322	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R401	1-216-041-00	METAL CHIP 470 5% 1/10W	
R402	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R501	1-216-017-00	METAL CHIP 47 5% 1/10W	
R502	1-216-017-00	METAL CHIP 47 5% 1/10W	
R503	1-216-017-00	METAL CHIP 47 5% 1/10W	
R504	1-216-017-00	METAL CHIP 47 5% 1/10W	
R505	1-216-017-00	METAL CHIP 47 5% 1/10W	
R506	1-216-017-00	METAL CHIP 47 5% 1/10W	
R507	1-216-017-00	METAL CHIP 47 5% 1/10W	
R508	1-216-017-00	METAL CHIP 47 5% 1/10W	
R509	1-216-017-00	METAL CHIP 47 5% 1/10W	
R510	1-216-017-00	METAL CHIP 47 5% 1/10W	
R511	1-216-017-00	METAL CHIP 47 5% 1/10W	
R512	1-216-119-00	METAL CHIP 820K 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R513	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R514	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R516	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R517	1-216-025-00	METAL CHIP	100	5%	1/10W	
R518	1-216-017-00	METAL CHIP	47	5%	1/10W	
R519	1-216-041-00	METAL CHIP	470	5%	1/10W	
R520	1-216-041-00	METAL CHIP	470	5%	1/10W	
R521	1-216-017-00	METAL CHIP	47	5%	1/10W	
R522	1-216-017-00	METAL CHIP	47	5%	1/10W	
R523	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R524	1-216-295-00	METAL CHIP	0	5%	1/10W	
R525	1-216-295-00	METAL CHIP	0	5%	1/10W	
R526	1-216-295-00	METAL CHIP	0	5%	1/10W	
R527	1-216-295-00	METAL CHIP	0	5%	1/10W	
R528	1-216-295-00	METAL CHIP	0	5%	1/10W	
R532	1-216-017-00	METAL CHIP	47	5%	1/10W	
R533	1-216-017-00	METAL CHIP	47	5%	1/10W	
R534	1-216-017-00	METAL CHIP	47	5%	1/10W	
R535	1-216-017-00	METAL CHIP	47	5%	1/10W	
R536	1-216-025-00	METAL CHIP	100	5%	1/10W	
R537	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R538	1-216-017-00	METAL CHIP	47	5%	1/10W	
R539	1-216-017-00	METAL CHIP	47	5%	1/10W	
R540	1-216-017-00	METAL CHIP	47	5%	1/10W	
R541	1-216-017-00	METAL CHIP	47	5%	1/10W	
R542	1-216-017-00	METAL CHIP	47	5%	1/10W	
R543	1-216-017-00	METAL CHIP	47	5%	1/10W	
R544	1-216-025-00	METAL CHIP	100	5%	1/10W	
R601	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R602	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R603	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R604	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R605	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R606	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R607	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R609	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R610	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R611	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R612	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R613	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R614	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R615	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R616	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R617	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R618	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R619	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R620	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R621	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R622	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R623	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R624	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R625	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R626	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R627	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R628	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R629	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R630	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R631	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R632	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R633	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R634	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R635	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R636	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R637	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R638	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R639	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R640	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R641	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R642	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R643	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R644	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R645	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R646	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R647	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R648	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R649	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R650	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R651	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R652	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R653	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R654	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R655	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R656	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R657	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R658	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R659	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R660	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R661	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R662	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R663	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R664	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R665	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R666	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R667	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R668	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R669	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R670	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R671	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R672	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

Ref. No.	Part No.	Description	Remark
R673	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R674	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R675	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R676	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R677	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R678	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R679	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R680	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R682	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R683	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R684	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R685	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R686	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R687	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R688	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R690	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R691	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R692	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R693	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R694	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R695	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R696	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
		(VARIABLE RESISTOR)	
RV401	1-226-771-11	RES, ADJ, METAL 1K	
		(VIBRATOR)	
X501	1-567-878-11	OSCILLATOR, CRYSTAL 14.31818MHz	
X502	1-577-121-11	VIBRATOR, CRYSTAL	
**			
*	1-630-974-13	PTC-8 BOARD (Ref.No 10,000 Series) ***********	
	3-737-916-02	COVER, SENSOR	
		(DIODE)	
D1401	8-719-820-46	LED TLN107A	
**			
*	1-630-975-13	PTC-9 BOARD (Ref.No 10,000 Series) ***********	
	3-737-916-02	COVER, SENSOR	
		(DIODE)	
D1402	8-719-820-46	LED TLN107A	
**			
*	1-630-986-13	PTC-10 BOARD (Ref.No 10,000 Series) ************	
	3-737-916-02	COVER, SENSOR	
		(PHOTO INTERUPTER)	
PH1409	8-729-822-57	TRANSISTOR TPS607A	
**			
*	1-630-987-13	PTC-11 BOARD (Ref.No 10,000 Series) ************	
	3-737-916-02	COVER, SENSOR	
		(PHOTO INTERUPTER)	
PH1410	8-729-822-57	TRANSISTOR TPS607A	
**			
*	1-641-072-13	PW-97 BOARD (Ref.No 3,000 Series) ***********	
		(CAPACITOR)	
C201	1-163-063-00	CERAMIC CHIP 0.022uF 10% 50V	
		(CONNECTOR)	
CN201	1-506-485-11	PIN, CONNECTOR 6P	
CN202	1-506-484-11	PIN, CONNECTOR 5P	
		(DIODE)	
D201	8-719-918-76	LED GL-3PR9	
D202	8-719-018-97	DIODE GL3KG43	
D203	8-719-110-49	DIODE RD18ES-B2	
D204	8-719-110-49	DIODE RD18ES-B2	
D205	8-719-110-49	DIODE RD18ES-B2	
D206	8-719-018-97	DIODE GL3KG43	
		(TRANSISTOR)	
Q201	8-729-900-98	TRANSISTOR DTC143TK	
Q202	8-729-900-98	TRANSISTOR DTC143TK	
Q203	8-729-900-98	TRANSISTOR DTC143TK	
		(RESISTOR)	
R201	1-216-045-00	METAL CHIP 680 5% 1/10W	
R202	1-216-025-00	METAL CHIP 100 5% 1/10W	
R203	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R204	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R205	1-216-025-00	METAL CHIP 100 5% 1/10W	
		(SWITCH)	
S201	1-553-856-00	SWITCH, KEY BOARD (POWER OFF)	
S202	1-570-845-11	SWITCH, SLIDE (INPUT SELECT)	

****

* 1-630-978-13 S-12 BOARD (Ref.No 10,000 Series)
****

(SWITCH)

Ref.No.	Part No.	Description	Remark
S1401	1-570-953-11	SWITCH, PUSH (1 KEY)	

****

* 1-630-979-13 SW-4 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1401	8-749-922-44	DIODE GP2S05J	

****

* 1-630-980-13 SW-5 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1402	8-719-913-55	DIODE GP-2S04-B	

****

* 1-630-981-13 SW-6 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1403	8-719-906-43	DIODE GP-1S03	

****

* 1-630-982-13 SW-7 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1404	8-719-913-55	DIODE GP-2S04-B	
PH1405	8-719-913-55	DIODE GP-2S04-B	

****

* 1-630-969-13 SW-8 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1406	8-749-922-44	DIODE GP2S05J	

****

* 1-630-970-13 SW-9 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1407	8-749-922-44	DIODE GP2S05J	

****

* 1-630-988-13 SW-10 BOARD (Ref.No 10,000 Series)
****

(PHOTO INTERUPTER)

Ref.No.	Part No.	Description	Remark
PH1408	8-749-922-44	DIODE GP2S05J	

****

* A-7063-140-A SY-50 BOARD, COMPLETE
****
(Ref.No 4,000 Series)

(CAPACITOR)

Ref.No.	Part No.	Description	Remark
C001	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C002	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C003	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C004	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C005	1-126-157-11	ELECT 10uF 20% 16V	
C006	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C007	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C008	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C010	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C011	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C012	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C013	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C014	1-124-589-11	ELECT 47uF 20% 16V	
C016	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C017	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C018	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C019	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C020	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C021	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C022	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C023	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C024	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C025	1-126-157-11	ELECT 10uF 20% 16V	
C026	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C027	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C028	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C029	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C030	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C031	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C032	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C033	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C034	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C035	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C036	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C037	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C038	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C039	1-163-033-00	CERAMIC CHIP 0.022uF 50V	
C040	1-124-584-00	ELECT 100uF 20% 10V	
C041	1-124-584-00	ELECT 100uF 20% 10V	

SY-50

Ref. No.	Part No.	Description				Remark
C042	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C043	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C044	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C045	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C046	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C047	1-124-589-11	ELECT	47uF	20%	16V	
C048	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C049	1-124-589-11	ELECT	47uF	20%	16V	
C050	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C051	1-126-160-11	ELECT	1uF	20%	50V	
C052	1-126-157-11	ELECT	10uF	20%	16V	
C053	1-130-483-00	MYLAR	0.01uF	5%	50V	
C054	1-130-483-00	MYLAR	0.01uF	5%	50V	
C055	1-130-483-00	MYLAR	0.01uF	5%	50V	
C056	1-130-478-00	MYLAR	0.0039uF	5%	50V	
C057	1-124-589-11	ELECT	47uF	20%	16V	
C058	1-126-157-11	ELECT	10uF	20%	16V	
C059	1-130-489-00	MYLAR	0.033uF	5%	50V	
C060	1-124-463-00	ELECT	0.1uF	20%	50V	
C061	1-126-160-11	ELECT	1uF	20%	50V	
C062	1-130-474-00	MYLAR	0.0018uF	5%	50V	
C063	1-124-463-00	ELECT	0.1uF	20%	50V	
C064	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C065	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C070	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
		(CONNECTOR)				
CN001	1-506-468-11	PIN, CONNECTOR	3P			
CN002	1-506-468-11	PIN, CONNECTOR	3P			
CN003	1-506-471-11	PIN, CONNECTOR	6P			
CN004	1-506-468-11	PIN, CONNECTOR	3P			
CN005	1-506-468-11	PIN, CONNECTOR	3P			
CN006	1-506-468-11	PIN, CONNECTOR	3P			
CN007	1-506-468-11	PIN, CONNECTOR	3P			
CN008	1-506-468-11	PIN, CONNECTOR	3P			
CN009	1-506-468-11	PIN, CONNECTOR	3P			
CN010	1-506-468-11	PIN, CONNECTOR	3P			
CN011	1-506-468-11	PIN, CONNECTOR	3P			
CN012	1-506-468-11	PIN, CONNECTOR	3P			
CN013	1-506-468-11	PIN, CONNECTOR	3P			
CN014	1-506-468-11	PIN, CONNECTOR	3P			
CN015	1-506-468-11	PIN, CONNECTOR	3P			
CN016	1-506-471-11	PIN, CONNECTOR	6P			
CN017	1-506-470-11	PIN, CONNECTOR	5P			
CN018	1-506-478-11	PIN, CONNECTOR	13P			
CN019	1-506-474-11	PIN, CONNECTOR	9P			
CN020	1-506-471-11	PIN, CONNECTOR	6P			
CN021	1-506-469-11	PIN, CONNECTOR	4P			
CN022	1-506-471-11	PIN, CONNECTOR	6P			
* CN023	1-564-011-71	PIN, CONNECTOR	12P			

Ref. No.	Part No.	Description				Remark
* CN024	1-560-894-00	PIN, CONNECTOR	6P			
		(DIODE)				
D001	8-719-110-16	DIODE	RD10ES-B1			
		(IC)				
IC001	8-759-073-32	IC	TMP91C640F-2351			
IC003	8-759-926-12	IC	SN74HC139ANS			
IC004	8-759-925-85	IC	SN74HC32ANS			
IC005	8-759-970-26	IC	PST523C			
IC006	8-759-926-82	IC	SN74HC574ANS			
IC007	8-759-926-82	IC	SN74HC574ANS			
IC008	8-759-926-77	IC	SN74HC541ANS			
IC009	8-759-926-82	IC	SN74HC574ANS			
IC010	8-759-909-45	IC	CX20084			
IC011	8-759-633-10	IC	M54544AL			
IC012	8-759-633-10	IC	M54544AL			
IC013	8-759-100-93	IC	uPC393G2			
IC014	8-759-983-69	IC	LM358PS			
IC015	8-759-100-93	IC	uPC393G2			
IC016	8-759-100-93	IC	uPC393G2			
		(COIL)				
L001	1-424-102-11	COIL, LINE FILTER				
L002	1-424-102-11	COIL, LINE FILTER				
		(TRANSISTOR)				
Q001	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q002	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q003	8-729-140-96	TRANSISTOR	KSC1008			
Q004	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q005	8-729-807-12	TRANSISTOR	2SD1802-S			
Q006	8-729-101-07	TRANSISTOR	2SB798-DL			
Q007	8-729-101-07	TRANSISTOR	2SB798-DL			
Q008	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
		(RESISTOR)				
R001	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R002	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R003	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R004	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R005	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R006	1-216-041-00	METAL CHIP	470	5%	1/10W	
R007	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R008	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R009	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R010	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R011	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R012	1-216-033-00	METAL CHIP	220	5%	1/10W	
R013	1-216-047-00	METAL CHIP	820	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R014	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R015	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R016	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R017	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R018	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R020	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R021	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R022	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R023	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R024	1-216-041-00	METAL CHIP	470	5%	1/10W	
R025	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R026	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R027	1-216-035-00	METAL CHIP	270	5%	1/10W	
R028	1-216-037-00	METAL CHIP	330	5%	1/10W	
R029	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R030	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R031	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R032	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R033	1-216-041-00	METAL CHIP	470	5%	1/10W	
R034	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R035	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R036	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R037	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R038	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R039	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R040	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R041	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R042	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R043	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R044	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R045	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R046	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R047	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R048	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R049	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R050	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R051	1-216-043-00	METAL CHIP	560	5%	1/10W	
R052	1-216-043-00	METAL CHIP	560	5%	1/10W	
R053	1-216-041-00	METAL CHIP	470	5%	1/10W	
R054	1-216-041-00	METAL CHIP	470	5%	1/10W	
R055	1-216-041-00	METAL CHIP	470	5%	1/10W	
R056	1-216-041-00	METAL CHIP	470	5%	1/10W	
R057	1-216-025-00	METAL CHIP	100	5%	1/10W	
R058	1-216-025-00	METAL CHIP	100	5%	1/10W	
R059	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R060	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R061	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R062	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R063	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R064	1-216-073-00	METAL CHIP	10K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R065	1-216-039-00	METAL CHIP	390	5%	1/10W	
R066	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R067	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R068	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R069	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R070	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R071	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R072	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R073	1-216-089-00	METAL CHIP	47K	5%	1/10W	

(VARIABLE RESISTOR)

RV001	1-238-092-11	RES, ADJ, CERMET	47K
RV002	1-238-093-11	RES, ADJ, CERMET	100K
RV003	1-238-090-11	RES, ADJ, CERMET	10K
RV004	1-238-091-11	RES, ADJ, CERMET	22K

(SWITCH)

S001	1-553-856-00	SWITCH, KEY BOARD
S002	1-553-856-00	SWITCH, KEY BOARD

(VIBRATOR)

X001	1-567-869-11	OSCILLATOR, CERAMIC	9.83MHz

****

* A-7063-247-A VA-69 BOARD, COMPLETE (E)

****

* A-7063-160-A VA-69 BOARD, COMPLETE (AEP/UK/AUS)

****

(Ref.No 1,000 Series)

(CAPACITOR)

C001	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C002	1-126-103-11	ELECT	470uF	20%	16V
C003	1-126-103-11	ELECT	470uF	20%	16V
C004	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C005	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C006	1-126-103-11	ELECT	470uF	20%	16V
C007	1-126-103-11	ELECT	470uF	20%	16V
C008	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C009	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C010	1-126-103-11	ELECT	470uF	20%	16V
C011	1-126-103-11	ELECT	470uF	20%	16V
C012	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C013	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C014	1-126-103-11	ELECT	470uF	20%	16V
C015	1-126-103-11	ELECT	470uF	20%	16V
C016	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C017	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C018	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C101	1-126-157-11	ELECT	10uF	20%	16V
C102	1-164-232-11	CERAMIC CHIP	0.01uF		50V

VA-69

Ref. No.	Part No.	Description				Remark
C103	1-126-157-11	ELECT	10uF	20%	16V	
C104	1-126-157-11	ELECT	10uF	20%	16V	
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C106	1-126-157-11	ELECT	10uF	20%	16V	
C107	1-126-157-11	ELECT	10uF	20%	16V	
C108	1-126-157-11	ELECT	10uF	20%	16V	
C109	1-126-157-11	ELECT	10uF	20%	16V	
C110	1-126-157-11	ELECT	10uF	20%	16V	
C111	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C112	1-126-157-11	ELECT	10uF	20%	16V	
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C114	1-126-157-11	ELECT	10uF	20%	16V	
C115	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C116	1-126-157-11	ELECT	10uF	20%	16V	
C117	1-126-103-11	ELECT	470uF	20%	16V	
C118	1-126-157-11	ELECT	10uF	20%	16V	
C119	1-124-360-00	ELECT	1000uF	20%	16V	
C120	1-126-157-11	ELECT	10uF	20%	16V	
C121	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C122	1-126-157-11	ELECT	10uF	20%	16V	
C123	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C124	1-126-103-11	ELECT	470uF	20%	16V	
C125	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C126	1-126-157-11	ELECT	10uF	20%	16V	
C127	1-126-157-11	ELECT	10uF	20%	16V	
C128	1-126-157-11	ELECT	10uF	20%	16V	
C129	1-126-157-11	ELECT	10uF	20%	16V	
C130	1-126-157-11	ELECT	10uF	20%	16V	
C131	1-126-103-11	ELECT	470uF	20%	16V	
C132	1-126-157-11	ELECT	10uF	20%	16V	
C133	1-124-360-00	ELECT	1000uF	20%	16V	
C143	1-124-360-00	ELECT	1000uF	20%	16V	
C150	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C152	1-163-110-00	CERAMIC CHIP	51PF	5%	50V	
C160	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C161	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C162	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C163	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C164	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C165	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C201	1-126-103-11	ELECT	470uF	20%	16V	
C203	1-126-157-11	ELECT	10uF	20%	16V	
C204	1-124-589-11	ELECT	47uF	20%	16V	
C205	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C206	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C207	1-126-163-11	ELECT	4.7uF	20%	50V	
C208	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C209	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C211	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C212	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C214	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C215	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C216	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C217	1-126-157-11	ELECT	10uF	20%	16V	
C218	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C219	1-126-157-11	ELECT	10uF	20%	16V	
C220	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C221	1-131-347-00	TANTALUM	1uF	10%	35V	
C223	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C224	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C225	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C226	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C227	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C228	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C229	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C230	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C231	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C232	1-126-157-11	ELECT	10uF	20%	16V	
C233	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C234	1-124-589-11	ELECT	47uF	20%	16V	
C236	1-124-589-11	ELECT	47uF	20%	16V	
C237	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C238	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C239	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C240	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C241	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C243	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C250	1-163-094-00	CERAMIC CHIP	11PF	5%	50V	
C251	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C252	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C253	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C254	1-163-227-11	CERAMIC CHIP	10PF	5%	50V	(AEP/UK/AUS)
C401	1-126-103-11	ELECT	470uF	20%	16V	
C402	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C403	1-126-157-11	ELECT	10uF	20%	16V	
C404	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C406	1-126-163-11	ELECT	4.7uF	20%	50V	
C407	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C408	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C414	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C415	1-124-234-00	ELECT	22uF	20%	16V	
C416	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C417	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C418	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C419	1-126-157-11	ELECT	10uF	20%	16V	
C420	1-126-101-11	ELECT	100uF	20%	16V	
C421	1-126-101-11	ELECT	100uF	20%	16V	
C422	1-131-349-00	TANTALUM	2.2uF	10%	35V	
C423	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	

Ref. No.	Part No.	Description				Remark
C424	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C425	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C426	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C427	1-126-163-11	ELECT	4.7uF	20%	50V	
C428	1-124-120-11	ELECT	220uF	20%	25V	
C431	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C434	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C435	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C437	1-126-157-11	ELECT	10uF	20%	16V	
C438	1-126-157-11	ELECT	10uF	20%	16V	
C439	1-126-157-11	ELECT	10uF	20%	16V	
C440	1-131-381-00	TANTALUM	47uF	10%	10V	
C442	1-126-157-11	ELECT	10uF	20%	16V	
C443	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C444	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C449	1-162-637-11	CERAMIC CHIP	0.47uF		16V	
C450	1-162-637-11	CERAMIC CHIP	0.47uF		16V	
C451	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C455	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C456	1-126-301-11	ELECT	1uF	20%	50V	
C457	1-126-301-11	ELECT	1uF	20%	50V	
C460	1-126-157-11	ELECT	10uF	20%	16V	
C461	1-124-589-11	ELECT	47uF	20%	16V	
C462	1-131-363-00	TANTALUM	4.7uF	10%	20V	
C463	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C470	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C471	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C472	1-126-101-11	ELECT	100uF	20%	16V	
C502	1-124-589-11	ELECT	47uF	20%	16V	
C503	1-126-157-11	ELECT	10uF	20%	16V	
C505	1-124-589-11	ELECT	47uF	20%	16V	
C506	1-126-157-11	ELECT	10uF	20%	16V	
C508	1-124-589-11	ELECT	47uF	20%	16V	
C509	1-126-157-11	ELECT	10uF	20%	16V	
C510	1-126-301-11	ELECT	1uF	20%	50V	
C511	1-126-157-11	ELECT	10uF	20%	16V	
C512	1-126-157-11	ELECT	10uF	20%	16V	
C513	1-126-157-11	ELECT	10uF	20%	16V	
C514	1-126-157-11	ELECT	10uF	20%	16V	
C515	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C516	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C518	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C519	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C520	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C521	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C522	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C523	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C524	1-124-120-11	ELECT	220uF	20%	25V	
C525	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C526	1-126-157-11	ELECT	10uF	20%	16V	
C527	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C529	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C530	1-126-157-11	ELECT	10uF	20%	16V	
C531	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C533	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C534	1-126-157-11	ELECT	10uF	20%	16V	
C535	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C537	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C540	1-126-157-11	ELECT	10uF	20%	16V	
C541	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C561	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C562	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C563	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C570	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C571	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C572	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C601	1-163-104-00	CERAMIC CHIP	30PF	5%	50V	
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C603	1-126-157-11	ELECT	10uF	20%	16V	
C604	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C605	1-130-487-00	MYLAR	0.022uF	5%	50V	
C608	1-131-348-00	TANTALUM	1.5uF	10%	35V	
C611	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C612	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C615	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C616	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C617	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C618	1-126-101-11	ELECT	100uF	20%	16V	
C619	1-126-301-11	ELECT	1uF	20%	50V	
C620	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V	
C621	1-126-162-11	ELECT	3.3uF	20%	50V	
C622	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C623	1-126-101-11	ELECT	100uF	20%	16V	
C624	1-163-098-00	CERAMIC CHIP	16PF	5%	50V	
C625	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C626	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C627	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C628	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C629	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C630	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C631	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C632	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C633	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C635	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C636	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C637	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C638	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C639	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C641	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C642	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	

Ref. No.	Part No.	Description	Remark
C643	1-126-157-11	ELECT 10uF 20% 16V	
C644	1-126-157-11	ELECT 10uF 20% 16V	
C645	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C646	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C647	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C648	1-126-157-11	ELECT 10uF 20% 16V	
C649	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C650	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C651	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C652	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C653	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C654	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C655	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C656	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C657	1-124-589-11	ELECT 47uF 20% 16V	
C658	1-124-465-00	ELECT 0.47uF 20% 50V	
C660	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C661	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C662	1-126-157-11	ELECT 10uF 20% 16V	
C663	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C664	1-124-589-11	ELECT 47uF 20% 16V	
C665	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C670	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C680	1-163-102-00	CERAMIC CHIP 24PF 5% 50V	
C681	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C682	1-163-104-00	CERAMIC CHIP 30PF 5% 50V	
C683	1-163-104-00	CERAMIC CHIP 30PF 5% 50V	
C684	1-163-227-11	CERAMIC CHIP 10PF 5% 50V	
C685	1-163-227-11	CERAMIC CHIP 10PF 5% 50V	(AEP/UK/AUS)
C690	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C691	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C692	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C693	1-126-154-11	ELECT 47uF 20% 6.3V	
C694	1-126-157-11	ELECT 10uF 20% 16V	
C695	1-126-157-11	ELECT 10uF 20% 16V	
C696	1-124-635-00	ELECT 220uF 20% 6.3V	
C697	1-126-157-11	ELECT 10uF 20% 16V	
C701	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C702	1-126-157-11	ELECT 10uF 20% 16V	
C703	1-126-157-11	ELECT 10uF 20% 16V	
C704	1-126-157-11	ELECT 10uF 20% 16V	
C705	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C706	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C707	1-126-157-11	ELECT 10uF 20% 16V	
C708	1-126-157-11	ELECT 10uF 20% 16V	
C709	1-126-157-11	ELECT 10uF 20% 16V	
C710	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C711	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C712	1-126-157-11	ELECT 10uF 20% 16V	
C713	1-126-157-11	ELECT 10uF 20% 16V	

Ref. No.	Part No.	Description	Remark
C714	1-126-157-11	ELECT 10uF 20% 16V	
C715	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C716	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C717	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C718	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C719	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C720	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C721	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C724	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C729	1-124-120-11	ELECT 220uF 20% 25V	
C730	1-124-120-11	ELECT 220uF 20% 25V	
C731	1-126-157-11	ELECT 10uF 20% 16V	
C732	1-124-589-11	ELECT 47uF 20% 16V	
C733	1-126-157-11	ELECT 10uF 20% 16V	
C734	1-163-263-11	CERAMIC CHIP 330PF 5% 50V	
C735	1-163-245-11	CERAMIC CHIP 56PF 5% 50V	
C736	1-126-157-11	ELECT 10uF 20% 16V	
C737	1-124-120-11	ELECT 220uF 20% 25V	
C738	1-126-157-11	ELECT 10uF 20% 16V	
C739	1-126-157-11	ELECT 10uF 20% 16V	
C741	1-124-589-11	ELECT 47uF 20% 16V	
C751	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C753	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C755	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C756	1-163-220-11	CERAMIC CHIP 3PF 0.25PF50V	
C760	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C761	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C762	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C763	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C764	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C765	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C801	1-124-589-11	ELECT 47uF 20% 16V	
C803	1-124-120-11	ELECT 220uF 20% 25V	
C804	1-126-157-11	ELECT 10uF 20% 16V	
C805	1-124-120-11	ELECT 220uF 20% 25V	
C806	1-126-157-11	ELECT 10uF 20% 16V	
C807	1-126-301-11	ELECT 1uF 20% 50V	
C808	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C809	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C810	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C811	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C812	1-124-589-11	ELECT 47uF 20% 16V	
C813	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C814	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C815	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C816	1-126-301-11	ELECT 1uF 20% 50V	
C817	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C818	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C820	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C821	1-164-232-11	CERAMIC CHIP 0.01uF 50V	

Ref. No.	Part No.	Description				Remark
C822	1-136-169-00	FILM	0.22uF	5%	50V	
C823	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C824	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C826	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C827	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C828	1-124-589-11	ELECT	47uF	20%	16V	
C829	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C830	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C840	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C841	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C842	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C843	1-136-169-00	FILM	0.22uF	5%	50V	

(CONNECTOR)

Ref. No.	Part No.	Description		Remark
* CN001	1-560-893-00	PIN, CONNECTOR	5P	
CN101	1-506-475-11	PIN, CONNECTOR	10P	
CN401	1-506-467-11	PIN, CONNECTOR	2P	
CN402	1-506-469-11	PIN, CONNECTOR	4P	
CN403	1-506-474-11	PIN, CONNECTOR	9P	
CN601	1-506-474-11	PIN, CONNECTOR	9P	
CN602	1-506-469-11	PIN, CONNECTOR	4P	
CN701	1-506-471-11	PIN, CONNECTOR	6P	

(TRIMMER)

Ref. No.	Part No.	Description		Remark
CT401	1-141-227-00	CAP, TRIMMER	20PF	
CT601	1-141-245-00	CAP, TRIMMER	30PF	
CT603	1-141-227-00	CAP, TRIMMER	20PF	
CT604	1-141-245-00	CAP, TRIMMER	30PF	
CT801	1-141-260-00	CAP, TRIMMER	50PF	

(DIODE)

Ref. No.	Part No.	Description		Remark
D101	8-719-108-12	DIODE	RD9.1E-W	
D102	8-719-108-12	DIODE	RD9.1E-W	
D103	8-719-108-12	DIODE	RD9.1E-W	
D105	8-719-104-34	DIODE	1S2836	
D106	8-719-108-12	DIODE	RD9.1E-W	
D107	8-719-108-12	DIODE	RD9.1E-W	
D108	8-719-108-12	DIODE	RD9.1E-W	
D401	8-719-400-18	DIODE	MA152WK	
D402	8-719-800-76	DIODE	1SS226	
D501	8-719-400-18	DIODE	MA152WK	
D502	8-719-400-18	DIODE	MA152WK	
D503	8-719-800-76	DIODE	1SS226	
D504	8-719-800-76	DIODE	1SS226	
D601	8-719-800-09	DIODE	1SV101	
D602	8-713-300-57	DIODE	1T33	
D603	8-719-400-18	DIODE	MA152WK	
D701	8-719-104-34	DIODE	1S2836	
D702	8-719-104-34	DIODE	1S2836	

(DELAY LINE)

Ref. No.	Part No.	Description	Remark
DL401	1-415-313-00	DELAY LINE (1H)	
DL402	1-415-861-11	DELAY LINE, LC	
DL701	1-415-645-11	DL (LC)	

(FILTER)

Ref. No.	Part No.	Description	Remark
FL101	1-236-129-11	ENCAPSULATED COMPONENT	
FL102	1-236-129-11	ENCAPSULATED COMPONENT	
FL103	1-236-129-11	ENCAPSULATED COMPONENT	
FL104	1-236-129-11	ENCAPSULATED COMPONENT	
FL105	1-236-129-11	ENCAPSULATED COMPONENT	
FL106	1-236-129-11	ENCAPSULATED COMPONENT	
FL107	1-236-129-11	ENCAPSULATED COMPONENT	
FL108	1-236-129-11	ENCAPSULATED COMPONENT	
FL109	1-236-129-11	ENCAPSULATED COMPONENT	
FL201	1-236-379-11	LPF	
FL203	1-236-384-11	LPF	
FL204	1-235-181-00	FILTER, BAND PASS	
FL501	1-236-379-11	LPF	
FL502	1-236-379-11	LPF	
FL503	1-236-379-11	LPF	
FL801	1-235-181-00	FILTER, BAND PASS	

(IC)

Ref. No.	Part No.	Description		Remark
IC001	8-759-604-35	IC	M5F78M05	
IC101	8-759-710-07	IC	NJM2234M	
IC102	8-759-710-07	IC	NJM2234M	
IC103	8-759-710-07	IC	NJM2234M	
IC104	8-759-710-86	IC	NJM2233BM	
IC105	8-759-710-86	IC	NJM2233BM	
IC106	8-759-057-40	IC	MC14577BF	
IC107	8-759-057-40	IC	MC14577BF	
IC108	8-759-710-86	IC	NJM2233BM	
IC109	8-759-057-40	IC	MC14577BF	
IC201	8-759-982-05	IC	RC7805FA	
IC202	8-759-057-40	IC	MC14577BF	
IC203	8-752-334-55	IC	CXD1175AM	
IC204	8-752-342-61	IC	CXD2105AQ	
IC205	8-759-242-74	IC	TC7W04F	
IC401	8-759-057-43	IC	MC14576BF	
IC403	8-752-036-21	IC	CXA1213S	
IC404	8-759-242-64	IC	TC4W53F	
IC405	8-759-908-17	IC	TL082CPS	
IC501	8-752-030-31	IC	CXA1024S	
IC502	8-759-908-17	IC	TL082CPS	
IC601	8-752-332-67	IC	CXD1217M	
IC603	8-759-242-76	IC	TC7W08F	
IC604	8-759-242-64	IC	TC4W53F	
IC605	8-759-987-20	IC	CXD1229Q	

VA-69

Ref. No.	Part No.	Description	Remark
IC606	8-759-242-74	IC TC7W04F	
IC607	8-759-101-12	IC uPC311G2	
IC608	8-759-925-90	IC SN74HC74ANS	
IC609	8-759-242-74	IC TC7W04F	
IC610	8-752-332-67	IC CXD1217M	
IC611	8-759-008-45	IC MC74HC4538F	
IC612	8-759-927-46	IC SN74HC00ANS	
IC613	8-759-008-45	IC MC74HC4538F	
IC614	8-759-926-29	IC SN74HC175ANS	
IC615	8-759-927-46	IC SN74HC00ANS	
IC616	8-759-925-90	IC SN74HC74ANS	
IC617	8-759-925-72	IC SN74HC02ANS	
IC618	8-759-076-26	IC M50555-190SP	
IC619	8-759-926-18	IC SN74HC157ANS	
IC650	8-759-710-61	IC NJM2229M	
IC660	8-759-242-74	IC TC7W04F	
IC701	8-759-710-86	IC NJM2233BM	
IC702	8-759-710-86	IC NJM2233BM	
IC703	8-759-710-86	IC NJM2233BM	
IC704	8-759-300-71	IC TC4053BF	
IC704	8-759-103-25	IC uPD4053BG	
IC705	8-752-033-58	IC V7040	
IC801	8-759-603-56	IC M51272FP	
IC802	8-759-925-90	IC SN74HC74ANS	
IC803	8-759-239-23	IC TC74HC86AF	

(COIL)

Ref. No.	Part No.	Description	Remark
L001	1-424-154-11	COIL, LINE FILTER	
L002	1-424-154-11	COIL, LINE FILTER	
L003	1-424-154-11	COIL, LINE FILTER	
L004	1-424-154-11	COIL, LINE FILTER	
L101	1-408-977-21	INDUCTOR 39uH	
L201	1-424-090-11	COIL, LINE FILTER	
L401	1-408-969-21	INDUCTOR 8.2uH	
L410	1-410-381-11	INDUCTOR CHIP 10uH	
L601	1-410-377-31	INDUCTOR CHIP 4.7uH	
L650	1-407-169-XX	INDUCTOR 100uH	
L660	1-408-967-21	INDUCTOR 5.6uH	
L670	1-410-381-11	INDUCTOR CHIP 10uH	
L671	1-410-381-11	INDUCTOR CHIP 10uH	
L672	1-410-381-11	INDUCTOR CHIP 10uH	
L673	1-410-381-11	INDUCTOR CHIP 10uH	
L674	1-410-381-11	INDUCTOR CHIP 10uH	
L680	1-410-385-11	INDUCTOR CHIP 22uH	
L701	1-408-975-21	INDUCTOR 27uH	

(TRANSISTOR)

Ref. No.	Part No.	Description	Remark
Q101	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q102	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q103	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q104	8-729-901-01	TRANSISTOR DTC144EK	
Q105	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q106	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q107	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q108	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q109	8-729-901-01	TRANSISTOR DTC144EK	
Q201	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q202	8-729-216-22	TRANSISTOR 2SA1162-L6	
Q203	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q204	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q205	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q207	8-729-100-66	TRANSISTOR 2SC1623	
Q208	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q209	8-729-216-22	TRANSISTOR 2SA1162-G	
Q210	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q211	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q212	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q401	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q402	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q403	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q404	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q405	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q406	8-729-901-01	TRANSISTOR DTC144EK	
Q501	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q502	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q503	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q504	8-729-216-22	TRANSISTOR 2SA1162-G	
Q505	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q506	8-729-216-22	TRANSISTOR 2SA1162-G	
Q507	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q508	8-729-216-22	TRANSISTOR 2SA1162-G	
Q509	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q510	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q511	8-729-216-22	TRANSISTOR 2SA1162-G	
Q513	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q601	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q602	8-729-901-01	TRANSISTOR DTC144EK	
Q650	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q651	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q652	8-729-901-01	TRANSISTOR DTC144EK	
Q701	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q702	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q703	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q704	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q705	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q710	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q715	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q716	8-729-901-01	TRANSISTOR DTC144EK	
Q717	8-729-902-96	TRANSISTOR FMS1	
Q718	8-729-902-96	TRANSISTOR FMS1	

Ref. No.	Part No.	Description				Remark
Q719	8-729-902-96	TRANSISTOR	FMS1			
Q720	8-729-216-22	TRANSISTOR	2SA1162-G			
Q727	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q728	8-729-216-22	TRANSISTOR	2SA1162-G			
Q729	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q730	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q731	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q801	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q802	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q803	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q804	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q805	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q806	8-729-100-66	TRANSISTOR	2SC1623-L6			
Q807	8-729-216-22	TRANSISTOR	2SA1162-L6			
Q808	8-729-216-22	TRANSISTOR	2SA1162-L6			

(RESISTOR)

Ref. No.	Part No.	Description				Remark
R101	1-216-022-00	METAL CHIP	75	5%	1/10W	
R102	1-216-022-00	METAL CHIP	75	5%	1/10W	
R103	1-216-022-00	METAL CHIP	75	5%	1/10W	
R104	1-216-022-00	METAL CHIP	75	5%	1/10W	
R105	1-216-022-00	METAL CHIP	75	5%	1/10W	
R106	1-216-022-00	METAL CHIP	75	5%	1/10W	
R107	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R108	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R109	1-216-041-00	METAL CHIP	470	5%	1/10W	
R110	1-216-047-00	METAL CHIP	820	5%	1/10W	
R111	1-216-041-00	METAL CHIP	470	5%	1/10W	
R112	1-216-047-00	METAL CHIP	820	5%	1/10W	
R113	1-216-041-00	METAL CHIP	470	5%	1/10W	
R114	1-216-047-00	METAL CHIP	820	5%	1/10W	
R115	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R116	1-216-041-00	METAL CHIP	470	5%	1/10W	
R117	1-216-047-00	METAL CHIP	820	5%	1/10W	
R118	1-216-035-00	METAL CHIP	270	5%	1/10W	
R119	1-216-045-00	METAL CHIP	680	5%	1/10W	
R120	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R121	1-216-022-00	METAL CHIP	75	5%	1/10W	
R122	1-216-041-00	METAL CHIP	470	5%	1/10W	
R123	1-216-047-00	METAL CHIP	820	5%	1/10W	
R124	1-216-035-00	METAL CHIP	270	5%	1/10W	
R125	1-216-045-00	METAL CHIP	680	5%	1/10W	
R126	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R127	1-216-022-00	METAL CHIP	75	5%	1/10W	
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R129	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R130	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R131	1-216-047-00	METAL CHIP	820	5%	1/10W	
R132	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R133	1-216-025-00	METAL CHIP	100	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R134	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R135	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R136	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R137	1-216-035-00	METAL CHIP	270	5%	1/10W	
R138	1-216-045-00	METAL CHIP	680	5%	1/10W	
R139	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R140	1-216-022-00	METAL CHIP	75	5%	1/10W	
R141	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R145	1-216-029-00	METAL CHIP	150	5%	1/10W	
R160	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R201	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R202	1-216-045-00	METAL CHIP	680	5%	1/10W	
R203	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R204	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R205	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R206	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R207	1-216-047-00	METAL CHIP	820	5%	1/10W	
R208	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R209	1-216-035-00	METAL CHIP	270	5%	1/10W	
R210	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R211	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R212	1-216-041-00	METAL CHIP	470	5%	1/10W	
R213	1-216-047-00	METAL CHIP	820	5%	1/10W	
R214	1-216-025-00	METAL CHIP	100	5%	1/10W	
R215	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R216	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R217	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R218	1-216-037-00	METAL CHIP	330	5%	1/10W	
R219	1-216-033-00	METAL CHIP	220	5%	1/10W	
R220	1-216-045-00	METAL CHIP	680	5%	1/10W	
R221	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R222	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R223	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R224	1-216-035-00	METAL CHIP	270	5%	1/10W	
R225	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R226	1-216-295-00	METAL CHIP	0	5%	1/10W	
R227	1-216-033-00	METAL CHIP	220	5%	1/10W	
R228	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R229	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R230	1-216-033-00	METAL CHIP	220	5%	1/10W	
R231	1-216-295-00	METAL CHIP	0	5%	1/10W	
R232	1-216-295-00	METAL CHIP	0	5%	1/10W	
R233	1-216-295-00	METAL CHIP	0	5%	1/10W	
R234	1-216-295-00	METAL CHIP	0	5%	1/10W	
R235	1-216-295-00	METAL CHIP	0	5%	1/10W	
R243	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R244	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R245	1-216-047-00	METAL CHIP	820	5%	1/10W	
R246	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R247	1-216-049-00	METAL CHIP	1K	5%	1/10W	

VA-69

Ref. No.	Part No.	Description				Remark
R248	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R249	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R250	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R251	1-216-037-00	METAL CHIP	330	5%	1/10W	
R252	1-216-033-00	METAL CHIP	220	5%	1/10W	
R253	1-216-045-00	METAL CHIP	680	5%	1/10W	
R254	1-216-041-00	METAL CHIP	470	5%	1/10W	
R255	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R256	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R257	1-216-047-00	METAL CHIP	820	5%	1/10W	
R258	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R259	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R260	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R261	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R262	1-216-047-00	METAL CHIP	820	5%	1/10W	
R270	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R272	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R402	1-216-039-00	METAL CHIP	390	5%	1/10W	
R403	1-216-041-00	METAL CHIP	470	5%	1/10W	
R404	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R405	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R406	1-216-295-00	METAL CHIP	0	5%	1/10W	
R408	1-216-039-00	METAL CHIP	390	5%	1/10W	
R409	1-216-031-00	METAL CHIP	180	5%	1/10W	
R411	1-216-295-00	METAL CHIP	0	5%	1/10W	
R415	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R416	1-216-133-00	METAL CHIP	3.3M	5%	1/10W	
R417	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R418	1-216-634-11	METAL CHIP	200	0.5%	1/10W	
R420	1-216-041-00	METAL CHIP	470	5%	1/10W	
R421	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R422	1-216-041-00	METAL CHIP	470	5%	1/10W	
R423	1-216-041-00	METAL CHIP	470	5%	1/10W	
R424	1-216-041-00	METAL CHIP	470	5%	1/10W	
R425	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R426	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R427	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R430	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R431	1-216-295-00	METAL CHIP	0	5%	1/10W	
R432	1-216-295-00	METAL CHIP	0	5%	1/10W	
R433	1-216-295-00	METAL CHIP	0	5%	1/10W	
R436	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R437	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R438	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R439	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R440	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R441	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R442	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R443	1-216-295-00	METAL CHIP	0	5%	1/10W	
R444	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R445	1-216-295-00	METAL CHIP	0	5%	1/10W	
R446	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R451	1-216-295-00	METAL CHIP	0	5%	1/10W	
R453	1-216-295-00	METAL CHIP	0	5%	1/10W	
R457	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R458	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R460	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R461	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R462	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R463	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R464	1-216-047-00	METAL CHIP	820	5%	1/10W	
R465	1-216-295-00	METAL CHIP	0	5%	1/10W	
R466	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R501	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R503	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R504	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R505	1-216-047-00	METAL CHIP	820	5%	1/10W	
R506	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R507	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R508	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R509	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R510	1-216-047-00	METAL CHIP	820	5%	1/10W	
R511	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R512	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R513	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R514	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R515	1-216-047-00	METAL CHIP	820	5%	1/10W	
R516	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R517	1-216-295-00	METAL CHIP	0	5%	1/10W	
R518	1-216-295-00	METAL CHIP	0	5%	1/10W	
R519	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R525	1-216-031-00	METAL CHIP	180	5%	1/10W	
R526	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R532	1-216-031-00	METAL CHIP	180	5%	1/10W	
R533	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R539	1-216-031-00	METAL CHIP	180	5%	1/10W	
R540	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R541	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R542	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R543	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R544	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R550	1-216-041-00	METAL CHIP	470	5%	1/10W	
R551	1-216-041-00	METAL CHIP	470	5%	1/10W	
R552	1-216-041-00	METAL CHIP	470	5%	1/10W	
R553	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R554	1-216-041-00	METAL CHIP	470	5%	1/10W	
R555	1-216-047-00	METAL CHIP	820	5%	1/10W	
R556	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R557	1-216-041-00	METAL CHIP	470	5%	1/10W	
R558	1-216-047-00	METAL CHIP	820	5%	1/10W	
R559	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R560	1-216-041-00	METAL CHIP	470	5%	1/10W	
R561	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R562	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R563	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R564	1-216-047-00	METAL CHIP	820	5%	1/10W	
R565	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R566	1-216-045-00	METAL CHIP	680	5%	1/10W	
R567	1-216-001-00	METAL CHIP	10	5%	1/10W	
R568	1-216-001-00	METAL CHIP	10	5%	1/10W	
R569	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R570	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R571	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R572	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R573	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R580	1-216-033-00	METAL CHIP	220	5%	1/10W	
R581	1-216-033-00	METAL CHIP	220	5%	1/10W	
R582	1-216-033-00	METAL CHIP	220	5%	1/10W	
R601	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R602	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R603	1-216-295-00	METAL CHIP	0	5%	1/10W	
R605	1-216-295-00	METAL CHIP	0	5%	1/10W	
R607	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R609	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R616	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R617	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R618	1-216-019-00	METAL CHIP	56	5%	1/10W	
R619	1-216-021-00	METAL CHIP	68	5%	1/10W	
R620	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R621	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R622	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R623	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R624	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R625	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R626	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R627	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R628	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R629	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R630	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R631	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R632	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R633	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R634	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R635	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R636	1-216-295-00	METAL CHIP	0	5%	1/10W	
R638	1-216-682-11	METAL CHIP	20K	0.5%	1/10W	
R639	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R640	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R641	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R642	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R643	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R644	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R645	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R646	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R652	1-216-688-11	METAL CHIP	36K	0.5%	1/10W	
R653	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R654	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R655	1-216-295-00	METAL CHIP	0	5%	1/10W	
R656	1-216-295-00	METAL CHIP	0	5%	1/10W	
R657	1-216-047-00	METAL CHIP	820	5%	1/10W	
R658	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R659	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R660	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R661	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R662	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R663	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R664	1-216-047-00	METAL CHIP	820	5%	1/10W	
R667	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R668	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R669	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R670	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R671	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R672	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R673	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R674	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R682	1-216-017-00	METAI CHIP	47	5%	1/10W	(AEP/UK/AUS)
R683	1-216-017-00	METAI CHIP	47	5%	1/10W	(AEP/UK/AUS)
R701	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R702	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R703	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R704	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R705	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R706	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R707	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R708	1-216-041-00	METAL CHIP	470	5%	1/10W	
R709	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R711	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R712	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R713	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R714	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R721	1-216-041-00	METAL CHIP	470	5%	1/10W	
R722	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R730	1-216-041-00	METAL CHIP	470	5%	1/10W	
R731	1-216-049-00	METAL CHIP	1K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R732	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R733	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R734	1-216-041-00	METAL CHIP	470	5%	1/10W	
R735	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R736	1-216-041-00	METAL CHIP	470	5%	1/10W	
R737	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R738	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R739	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R740	1-216-041-00	METAL CHIP	470	5%	1/10W	
R741	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R742	1-216-041-00	METAL CHIP	470	5%	1/10W	
R743	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R744	1-216-041-00	METAL CHIP	470	5%	1/10W	
R745	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R746	1-216-041-00	METAL CHIP	470	5%	1/10W	
R747	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R748	1-216-041-00	METAL CHIP	470	5%	1/10W	
R753	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R754	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R755	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R756	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R757	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R758	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R766	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R767	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R768	1-216-047-00	METAL CHIP	820	5%	1/10W	
R769	1-216-043-00	METAL CHIP	560	5%	1/10W	
R770	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R771	1-216-043-00	METAL CHIP	560	5%	1/10W	
R772	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R773	1-216-025-00	METAL CHIP	100	5%	1/10W	
R774	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R775	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R776	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R777	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R778	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R779	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R780	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R781	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R782	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R783	1-216-047-00	METAL CHIP	820	5%	1/10W	
R790	1-216-041-00	METAL CHIP	470	5%	1/10W	
R791	1-216-041-00	METAL CHIP	470	5%	1/10W	
R792	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R793	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R794	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R795	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R801	1-216-650-11	METAL CHIP	910	0.5%	1/10W	
R802	1-216-625-11	METAL CHIP	82	0.5%	1/10W	
R803	1-216-615-11	METAL CHIP	33	0.5%	1/10W	

Ref. No.	Part No.	Description				Remark
R804	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R805	1-216-295-00	METAL CHIP	0	5%	1/10W	
R806	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R807	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R808	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R809	1-216-039-00	METAL CHIP	390	5%	1/10W	
R810	1-216-037-00	METAL CHIP	330	5%	1/10W	
R811	1-216-047-00	METAL CHIP	820	5%	1/10W	
R812	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R813	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R814	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W	
R815	1-216-043-00	METAL CHIP	560	5%	1/10W	
R816	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R817	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R818	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R819	1-216-047-00	METAL CHIP	820	5%	1/10W	
R820	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R821	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W	
R822	1-216-043-00	METAL CHIP	560	5%	1/10W	
R823	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R824	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R825	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R826	1-216-047-00	METAL CHIP	820	5%	1/10W	
R827	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R828	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W	
R829	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W	
R830	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W	
R831	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R832	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R833	1-216-295-00	METAL CHIP	0	5%	1/10W	
R834	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R835	1-216-031-00	METAL CHIP	180	5%	1/10W	
R837	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R838	1-216-031-00	METAL CHIP	180	5%	1/10W	
R840	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R841	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R843	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R844	1-216-047-00	METAL CHIP	820	5%	1/10W	
R845	1-216-295-00	METAL CHIP	0	5%	1/10W	
R846	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R847	1-216-647-11	METAL CHIP	680	0.5%	1/10W	

(VARIABLE RESISTOR)

RV101	1-238-087-11	RES, ADJ, CERMET	1K	
RV102	1-238-087-11	RES, ADJ, CERMET	1K	
RV103	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV104	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV105	1-238-087-11	RES, ADJ, CERMET	1K	
RV202	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV203	1-238-089-11	RES, ADJ, CERMET	4.7K	

Ref. No.	Part No.	Description		Remark
RV401	1-238-091-11	RES, ADJ, CERMET	22K	
RV402	1-238-086-11	RES, ADJ, CERMET	470	
RV403	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV404	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV408	1-238-090-11	RES, ADJ, CERMET	10K	
RV409	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV410	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV501	1-238-091-11	RES, ADJ, CERMET	22K	
RV502	1-238-091-11	RES, ADJ, CERMET	22K	
RV503	1-238-087-11	RES, ADJ, CERMET	1K	
RV504	1-238-087-11	RES, ADJ, CERMET	1K	
RV505	1-238-087-11	RES, ADJ, CERMET	1K	
RV506	1-238-087-11	RES, ADJ, CERMET	1K	
RV507	1-238-087-11	RES, ADJ, CERMET	1K	
RV508	1-238-087-11	RES, ADJ, CERMET	1K	
RV601	1-238-090-11	RES, ADJ, CERMET	10K	
RV602	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV701	1-238-087-11	RES, ADJ, CERMET	1K	
RV702	1-238-087-11	RES, ADJ, CERMET	1K	
RV703	1-238-087-11	RES, ADJ, CERMET	1K	
RV706	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV707	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV801	1-238-087-11	RES, ADJ, CERMET	1K	
RV802	1-238-088-11	RES, ADJ, CERMET	2.2K	
RV803	1-238-087-11	RES, ADJ, CERMET	1K	
RV804	1-238-088-11	RES, ADJ, CERMET	2.2K	
RV805	1-238-087-11	RES, ADJ, CERMET	1K	
RV806	1-238-087-11	RES, ADJ, CERMET	1K	
RV807	1-238-089-11	RES, ADJ, CERMET	4.7K	
RV809	1-238-086-11	RES, ADJ, CERMET	470	

(TRANSFORMER)

T401	1-425-928-00	TRANSFORMER, DELAY ADJUSTING

(VIBRATOR)

X401	1-567-860-11	OSCILLATOR, CRYSTAL	4.433618MHz
X402	1-577-611-11	OSCILALTOR, CERAMIC	
X601	1-567-344-21	VIBRATOR, CRYSTAL (VCO)	

****

⚠ 1-413-759-11 POWER BLOCK

****

⚠ 1-540-054-11 INLET CCT2102-0201

(CAPACITOR)

⚠C001	1-136-527-12	FILM	0.47uF	250V
⚠C002	1-161-742-51	CERAMIC	2200P	
⚠C003	1-161-742-51	CERAMIC	2200P	
⚠C004	1-136-185-12	FILM	0.22uF	250V
C006	9-902-910-01	ELECT	270uF	400V

Ref. No.	Part No.	Description		Remark
C007	9-902-912-01	FILM	0.022uF	630V
C008	9-902-913-01	CERAMIC	100P	1KV
C009	9-902-911-01	ELECT	150uF	35V
C010	9-901-750-01	FILM	0.033uF	100V
C011	9-901-750-01	FILM	0.033uF	100V
C012	9-901-755-01	CERAMIC	220P	50V
C013	9-901-762-01	ELECT	4.7uF	50V
C014	9-902-920-01	FILM	0.01uF	100V
⚠C015	1-161-168-52	CERAMIC	3300P	
⚠C016	1-161-168-52	CERAMIC	3300P	
⚠C017	1-161-168-52	CERAMIC	3300P	
⚠C018	1-161-742-51	CERAMIC	2200P	
⚠C019	1-161-742-51	CERAMIC	2200P	
⚠C020	1-161-742-51	CERAMIC	2200P	
⚠C021	1-161-742-51	CERAMIC	2200P	
C101	9-901-756-01	CERAMIC	470P	1KV
C102	9-901-767-01	ELECT	2200uF	35V
C103	9-901-767-01	ELECT	2200uF	35V
C104	9-901-765-01	ELECT	56uF	35V
C105	9-901-752-02	FILM	0.047uF	100V
C106	9-901-762-01	ELECT	4.7uF	50V
C107	9-901-747-01	FILM	0.01uF	100V
C108	9-901-762-01	ELECT	47uF	25V
C109	9-901-761-01	ELECT	10uF	50V
C201	9-901-764-01	ELECT	22uF	35V
C202	9-901-766-01	ELECT	1500uF	16V
C203	1-126-614-11	ELECT	180uF	16V
C204	9-901-751-01	FILM	0.0047uF	100V
C205	9-901-747-01	FILM	0.01uF	100V
C206	9-901-748-01	FILM	0.015uF	100V
C207	9-901-747-01	FILM	0.01uF	100V
C208	9-901-763-01	ELECT	0.47uF	50V
C209	1-126-070-11	ELECT	82uF	10V
C301	9-901-764-01	ELECT	22uF	35V
C302	9-901-753-01	FILM	0.0056uF	100V
C303	9-902-921-01	FILM	0.1uF	100V
C304	9-901-747-01	FILM	0.01uF	100V
C305	1-126-376-11	ELECT	470uF	25V
C306	9-901-747-01	FILM	0.01uF	100V
C401	9-901-759-01	ELECT	47uF	16V
C501	9-901-759-01	ELECT	47uF	16V
C601	9-901-759-01	ELECT	47uF	16V
C701	9-901-759-01	ELECT	47uF	16V
C801	9-901-759-01	ELECT	47uF	16V

(CONNECTOR)

CN001	1-560-893-11	CONNECTOR	5P
CN002	1-560-894-21	CONNECTOR	6P
CN003	1-560-896-11	CONNECTOR	8P
CN004	1-563-141-11	CONNECTOR	8P

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

POWER BLOCK

Ref. No.	Part No.	Description			Remark
		(DIODE)			
D001	9-901-768-01	DIODE	D5SB60		
D002	8-719-018-43	DIODE	RGIC		
D003	9-901-772-01	DIODE	ISS178		
D004	8-719-974-84	DIODE	ERA91-02		
D005	8-719-110-75	DIODE	RD33ESAB		
D006	8-719-110-75	DIODE	RD33ESAB		
D007	8-719-974-84	DIODE	ERA91-02		
D101	9-901-771-01	DIODE	ESAD92M-03		
D102	8-719-974-84	DIODE	ERA91-02		
D103	8-719-913-44	DIODE	ERA82-004		
D104	9-901-772-01	DIODE	ISS178		
D105	9-901-772-01	DIODE	ISS178		
D106	9-901-772-01	DIODE	ISS178		
D107	9-901-772-01	DIODE	ISS178		
D108	8-719-110-65	DIODE	RD27ESAB		
D109	9-901-772-01	DIODE	ISS178		
D110	9-901-772-01	DIODE	ISS178		
D201	8-719-920-31	DIODE	ERA15-01		
D202	9-901-770-01	DIODE	ESAB92M-02		
D203	9-901-772-01	DIODE	ISS178		
D204	9-901-772-01	DIODE	ISS178		
D301	8-719-920-31	DIODE	ERA15-01		
D302	9-901-772-01	DIODE	ISS178		
D303	9-901-770-01	DIODE	ESAB92M-02		
D401	9-901-772-01	DIODE	ISS178		
D402	8-719-109-85	DIODE	RD5.6ESAB		
D501	8-719-110-15	DIODE	RD10ESAB		
D502	9-901-772-01	DIODE	ISS178		
D601	9-901-772-01	DIODE	ISS178		
D701	9-901-772-01	DIODE	ISS178		
D702	8-719-110-34	DIODE	RD13ESAB		
D801	9-901-772-01	DIODE	ISS178		
		(FUSE)			
⚠F001	1-576-230-11	FUSE	3.15A	250V	
		(IC)			
IC001	9-901-774-01	IC	M51995P		
IC101	8-759-711-96	IC	NJM431L		
IC102	8-759-135-80	IC	uPC358C		
IC103	8-759-711-96	IC	NJM431L		
IC201	8-759-937-59	IC	MB3759M		
IC301	8-759-937-59	IC	MB3759M		
IC401	8-759-701-56	IC	NJM78M05FA		
IC501	8-759-701-78	IC	NJM7809FA		
IC601	9-901-775-01	IC	PQ12RH1		
IC701	9-901-775-01	IC	PQ12RH1		
IC801	8-759-506-12	IC	PQ12RF1		

Ref. No.	Part No.	Description			Remark
		(COIL)			
⚠L001	9-902-915-01	FILTER, LINE	SU16V-08080		
⚠L002	9-902-916-01	FILTER, LINE	SU20U-10200		
⚠L006	9-902-909-01	AC CORE	ESD-R-19DW		
L101	9-901-777-01	BEAD CORE	LFP3A		
L102	9-901-777-01	BEAD CORE	LFP3A		
L201	9-901-778-01	CHOKE CORE	HP-032		
L202	9-901-777-01	BEAD CORE	LFP3A		
L203	9-901-779-01	DRUM CORE	RD810A3F		
L301	9-901-778-01	CHOKE CORE	FP-032		
L302	9-901-777-01	BEAD CORE	LFP3A		
		(PHOTO COUPLER)			
⚠PC001	9-902-919-01	COUPLER, PHOTO	PC111		
⚠PC002	9-902-919-01	COUPLER, PHOTO	PC111		
		(TRANSISTOR)			
Q001	9-902-914-01	FET	2SK1082		
Q002	8-729-281-59	TRANSISTOR	2SC1815		
Q101	8-729-202-43	TRANSISTOR	2SA1020		
Q102	8-729-201-59	TRANSISTOR	2SA1015		
Q103	9-901-781-01	TRANSISTOR	RN1001		
Q104	8-729-201-59	TRANSISTOR	2SA1015		
Q105	9-901-781-01	TRANSISTOR	RN1001		
Q106	9-901-781-01	TRANSISTOR	RN1001		
Q201	9-901-783-01	TRANSISTOR	2SA1451		
Q202	9-901-782-01	TRANSISTOR	RN2001		
Q203	9-901-781-01	TRANSISTOR	RN1001		
Q301	9-901-783-01	TRANSISTOR	2SA1451		
Q701	9-901-781-01	TRANSISTOR	RN1001		
Q801	9-901-781-01	TRANSISTOR	RN1001		
		(RESISTOR)			
R001	9-901-785-01	CARBON	330K	1/2W	
R002	1-214-603-61	FUSIBLE	47K	2W	
R003	1-214-603-61	FUSIBLE	47K	2W	
R004	1-214-597-61	FUSIBLE	100K	2W	
R005	1-214-475-61	FUSIBLE	68K	2W	
R006	1-214-475-61	FUSIBLE	68K	2W	
R007	1-206-471-61	FUSIBLE	22	2W	
R008	9-901-788-01	CEMENT	0.1	2W	
R009	1-249-397-11	CARBON	22	1/4W	
R010	1-249-429-11	CARBON	10K	1/4W	
R011	1-249-435-11	CARBON	33K	1/6W	
R012	1-249-435-11	CARBON	33K	1/6W	
R013	1-249-437-11	CARBON	47K	1/6W	
R014	1-249-437-11	CARBON	47K	1/6W	
R015	1-249-401-11	CARBON	47	1/6W	
R016	9-901-787-01	FUSE	22	1/4W	
R017	1-249-403-11	CARBON	68	1/6W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R018	1-249-405-11	CARBON	100	1/6W	
R019	1-249-439-11	CARBON	68K	1/6W	
R020	1-249-429-11	CARBON	10K	1/6W	
R021	1-249-400-11	CARBON	39	1/4W	
R101	1-206-463-61	FUSIBLE	10	2W	
R102	1-206-660-61	FUSIBLE	680	2W	
R103	1-249-417-11	CARBON	1K	1/6W	
R104	1-249-413-11	CARBON	470	1/6W	
R105	1-249-429-11	CARBON	10K	1/6W	
R106	1-249-429-11	CARBON	10K	1/6W	
R107	1-249-419-11	CARBON	1.5K	1/6W	
R108	1-249-423-11	CARBON	3.3K	1/6W	
R109	9-901-786-01	METAL	8.25K	1/6W	
R110	1-215-455-11	METAL	10K	1/6W	
R111	1-249-425-11	CARBON	4.7K	1/6W	
R112	1-215-455-11	METAL	10K	1/6W	
R113	1-249-425-11	CARBON	4.7K	1/6W	
R114	1-215-455-11	METAL	10K	1/6W	
R115	1-215-455-11	METAL	10K	1/6W	
R116	1-215-455-11	METAL	10K	1/6W	
R117	1-249-425-11	CARBON	4.7K	1/6W	
R118	1-249-401-11	CARBON	47	1/6W	
R119	1-249-426-11	CARBON	5.6K	1/6W	
R120	1-249-419-11	CARBON	1.5K	1/6W	
R121	1-249-429-11	CARBON	10K	1/6W	
R122	1-212-376-61	FUSIBLE	22	1W	
R123	1-249-422-11	CARBON	2.7K	1/6W	
R124	1-249-436-11	CARBON	39K	1/6W	
R125	1-249-427-11	CARBON	6.8K	1/6W	
R126	1-249-436-11	CARBON	39K	1/6W	
R127	1-249-393-11	CARBON	10	1/6W	
R128	1-249-423-11	CARBON	3.3K	1/6W	
R201	1-249-401-11	CARBON	47	1/4W	
R202	1-213-129-61	FUSIBLE	68	1W	
R203	1-213-129-61	FUSIBLE	68	1W	
R204	1-249-393-11	CARBON	10	1/6W	
R205	1-249-429-11	CARBON	10K	1/6W	
R206	1-249-405-11	CARBON	100	1/6W	
R207	1-249-417-11	CARBON	1K	1/6W	
R208	1-249-421-11	CARBON	2.2K	1/6W	
R209	1-249-426-11	CARBON	5.6K	1/6W	
R210	1-249-441-11	CARBON	100K	1/6W	
R211	1-249-429-11	CARBON	10K	1/6W	
R212	1-249-417-11	CARBON	1K	1/6W	
R213	1-249-417-11	CARBON	1K	1/6W	
R214	1-249-421-11	CARBON	2.2K	1/6W	
R215	1-249-429-11	CARBON	10K	1/6W	
R217	1-249-422-11	CARBON	2.7K	1/6W	
R218	1-249-421-11	CARBON	2.2K	1/6W	
R219	1-247-433-11	CARBON	22K	1/6W	

Ref. No.	Part No.	Description			Remark
R220	9-901-788-01	CEMENT	0.1	2W	
R221	1-249-405-11	CARBON	100	1/6W	
R222	1-249-408-11	CARBON	180	1/4W	
R301	1-249-401-11	CARBON	47	1/4W	
R302	1-206-483-61	FUSIBLE	68	2W	
R303	1-206-483-61	FUSIBLE	68	2W	
R304	1-249-393-11	CARBON	10	1/6W	
R305	1-249-429-11	CARBON	10K	1/6W	
R306	1-249-426-11	CARBON	5.6K	1/6W	
R307	1-249-413-11	CARBON	470	1/6W	
R308	1-249-405-11	CARBON	100	1/6W	
R309	1-249-429-11	CARBON	10K	1/6W	
R310	1-249-429-11	CARBON	10K	1/6W	
R311	1-249-417-11	CARBON	1K	1/6W	
R312	1-249-417-11	CARBON	1K	1/6W	
R313	1-249-437-11	CARBON	47K	1/6W	
R314	1-249-417-11	CARBON	1K	1/6W	
R315	1-249-405-11	CARBON	100	1/6W	
R316	1-249-423-11	CARBON	3.3K	1/6W	
R317	1-249-419-11	CARBON	1.5K	1/6W	
R318	9-901-789-01	CEMENT	0.05	2W	
R701	1-249-429-11	CARBON	10K	1/6W	
R801	1-249-429-11	CARBON	10K	1/6W	

(RELAY)

RY101	1-515-720-11	RELAY	DG12D1-0M	12V

(TRANSFORMER)

⚠T001	9-901-793-01	TRANSFORMER, CONVERTER	N-T00-608

(THERMISTOR)

TH001	9-902-918-01	THERMISTOR	8D-18F2

(VARIABLE RESISTOR)

RV101	9-901-792-01	RES, ADJ	2K
RV102	9-901-791-01	RES, ADJ	2K
RV103	9-901-791-01	RES, ADJ	2K
RV201	9-901-790-01	RES, ADJ	1K
RV301	9-901-790-01	RES, ADJ	1K

****

MISCELLANEOUS
****

3	1-466-613-21	SWITCH BLOCK, CONTROL
⚠64	1-413-759-11	POWER BLOCK (SWITCHING REGULATOR)
123	1-543-950-11	CORE, FERRITE
M1401	1-541-309-11	MOTOR, L (RF-370C)(PLATEN DRIVING)
M1402	1-541-309-11	MOTOR, L (RF-370C)(T HEAD UP/DOWN)
M1403	1-541-684-12	MOTOR, DC (FAN MOTOR)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
TH901	1-543-774-11	HEAD, THERMAL (TH66207)	

****

ACCESSORIES & PACKING MATERIALS
****

Ref. No.	Part No.	Description	Remark
	1-465-977-32	REMOTE COMMANDER (RMT-7)	
	1-551-086-31	CORD, CONNECTION	
⚠	1-574-056-11	CORD, POWER (AEP, E)	
	1-575-335-21	CORD, CONNECTION (AEP, UK, AUS)	
⚠	1-590-866-11	CORD, POWER (UK, AUS)	
*	3-694-922-01	SHEET, PROTECTION	
	3-753-911-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-753-911-41	MANUAL, INSTRUCTION (GERMAN, FRENCH, ITALIAN) (AEP)	
	3-753-911-51	MANUAL, INSTRUCTION (DUTCH, PORTUGUESE, SPANISH) (AEP)	
	3-753-911-61	MANUAL, INSTRUCTION (ARABIC, CHINESE) (E)	
*	3-947-749-01	CUSHION (UPPER)	
*	3-947-750-01	CUSHION (LOWER)	
*	3-947-751-11	INDIVIDUAL CARTON	
	7-621-775-10	SCREW +B 2.6X4	
	A-7001-179-A	TRAY ASSY, PAPER	

****

****
HARDWARE LIST
****

Ref. No.	Part No.	Description	Remark
#1	7-621-255-25	SCREW +P 2X4	
#2	7-621-775-40	SCREW +B 2.6X8	
#3	7-624-105-04	STOP RING 2.3, TYPE -E	
#4	7-624-106-04	STOP RING 3.0, TYPE -E	
#5	7-624-109-04	STOP RING 5.0, TYPE -E	
#6	7-682-561-09	SCREW +B 4X8	
#7	7-682-646-09	SCREW +PS 3X5	
#8	7-682-666-09	SCREW +PS 4X20	
#9	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#10	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#11	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#12	7-682-547-04	SCREW +BVTT 3X6 (S)	
#13	7-682-648-09	SCREW (+BVW) (3X8) (SN), TAPPING	

Ref. No.	Part No.	Description	Remark

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 9
ADJUSTMENTS

During the adjustments, refer to the layout diagrams for adjustment related parts beginning from page 200.

9-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for the adjustments.

9-1-1. Equipments to be Used

1) Monitor TV
2) Oscilloscope (2 phenomena), band above 30 MHz, with delay mode.
   (Unless specified otherwise, use 10:1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Regulated power supply
7) Power supply block extension cord
   (To use between CN4 and MD Head.) (8P.1 mm)
   Part code: J-6082-119-A
8) 0.7 mm and 1.1 mm clearance gauges
9) Video printing paper
10) Video ribbon cassette

9-1-2. Connecting the Equipments

Connect the measuring instrument as shown in Fig. 9-1, according to the indication of input terminal (S video or video), and perform the adjustments. The input terminal to be used is specified in the ( ) in the signal column. Either one can be used if specifications are not given. Set the Auto picture switch (AGC switch) of the operating switch block to [Off] unless specified otherwise.

Note: If the video input is used in adjustments which are specified for the S video input to be used, there may be cases in which adjusted parts fails to satisfy the given specifications of this unit. Be sure to use the input specified.
If the S video output terminal VTR is used as the signal source during the adjustments, this VTR will influence the performance of the unit. It is therefore recommended that a pattern generator with a Y/C separation output terminal be used.

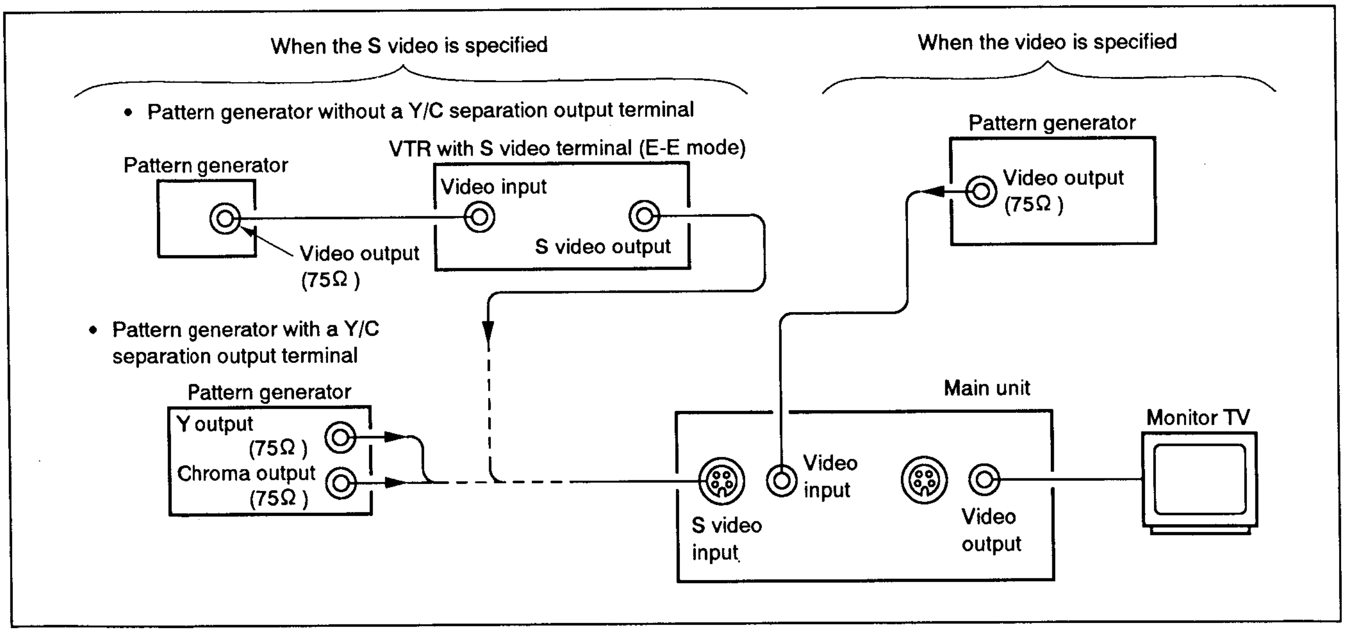

When the S video is specified
• Pattern generator without a Y/C separation output terminal
Pattern generator
VTR with S video terminal (E-E mode)
Video input
S video output
Video output
(75Ω)
• Pattern generator with a Y/C separation output terminal
Pattern generator
Y output
(75Ω)
Chroma output
(75Ω)
When the video is specified
Pattern generator
Video output
(75Ω)
Main unit
S video input
Video input
Video output
Monitor TV

Fig. 9-1

9-1-3. Checking the Input Signal

As the video signal obtained from the pattern generator is used as the adjustment signal during the video circuit adjustment, this video output signal must satisfy the given specification.

1. When S Video Input

Two types of color bar signals are used for the S video input.

① Color bar with white 100%

Connect an oscilloscope to the Y signal terminal of the S video input terminal. Check that the sync signal of the Y signal is 300 mV, the amplitude of the video section is 700 mV,.and that the setup level is 0 mV. (If a VTR with a S video output terminal is used, check that there are no residual chroma and burst signals as well.) Connect the oscilloscope to the chroma signal terminal of the S video input terminal, and check that the amplitude of the burst signal of the chroma signal is 300 mV and flat. Check that the amplitude ratio of the burst signal to the chroma signal is 0.30:0.66. The Y and chroma signals used for the adjustments are shown in Fig. 9-2.

Setup level: Electric potential difference between black and pedestal

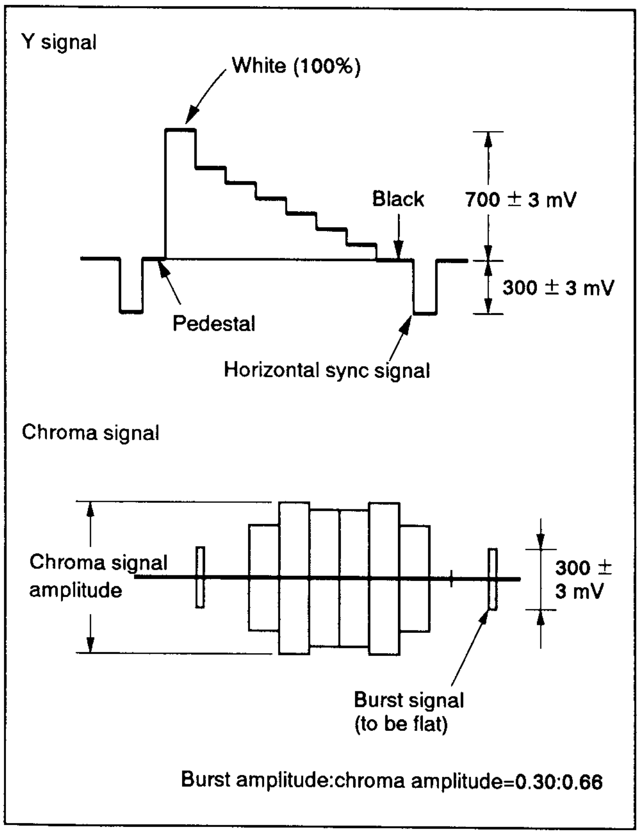

Y signal
White (100%)
Black
700 ± 3 mV
300 ± 3 mV
Pedestal
Horizontal sync signal
Chroma signal
Chroma signal amplitude
300 ± 3 mV
Burst signal (to be flat)
Burst amplitude:chroma amplitude=0.30:0.66

Fig. 9-2 Color Bar with white 100% Signal of Pattern Generator (When terminated at 75Ω)

② Color bar with white 75%

Connect an oscilloscope to the Y signal terminal of the S video input terminal. Check that the sync signal of the Y signal is 300 mV, the amplitude of the video section is 525 mV, and that the setup level is 0 mV. (If a VTR with a S video output terminal is used, check that there are no residual chroma and burst signals as well.) Connect the oscilloscope to the chroma signal terminal of the S video input terminal, and check that the amplitude of the burst signal of the chroma signal is 300 mV and flat. Check that the amplitude ratio of the burst signal to the chroma signal is 0.30:0.66. The Y and chroma signals used for the adjustments are shown in Fig. 9-3.

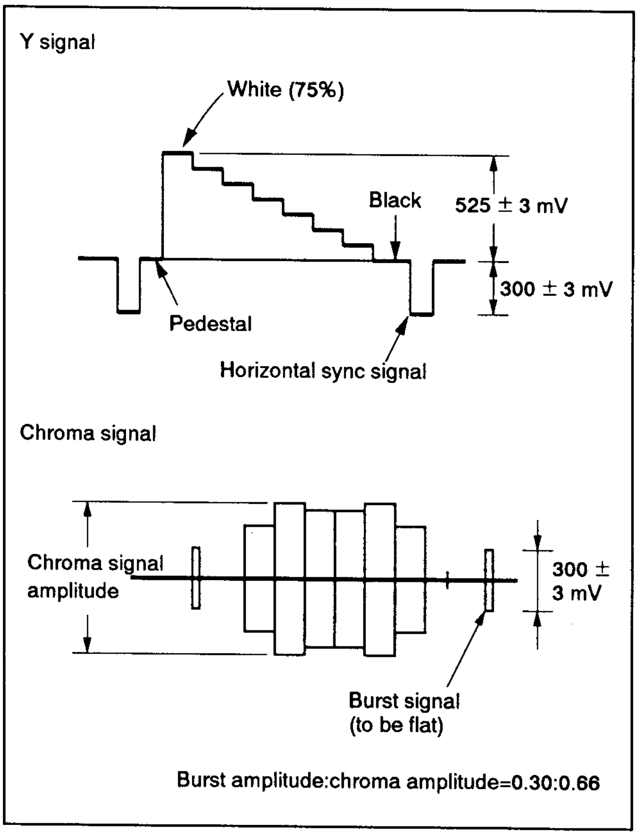

Y signal
White (75%)
Black
525 ± 3 mV
300 ± 3 mV
Pedestal
Horizontal sync signal
Chroma signal
Chroma signal amplitude
300 ± 3 mV
Burst signal (to be flat)
Burst amplitude:chroma amplitude=0.30:0.66

Fig. 9-3 Color Bar with white 75% Signal of Pattern Generator (When terminated at 75Ω)

2. When Video Input

Connect an oscilloscope to the video input terminal, and check that the amplitude of the sync signal of the video signal is 300 mV, the amplitude of the video section is 700 mV, the setup level is 0 mV, and that the amplitude of the burst signal is 300 mV and flat. Check that the level ratio of the burst signal to the "red" signal is 0.30:0.66.

The video signal (color bar) used for adjustments is shown in Fig. 9-4.

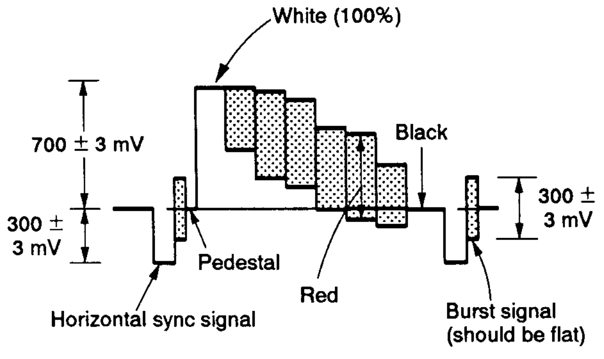


Fig. 9-4 Color Bar Signal of Pattern Generator (When terminated at 75Ω)

9-1-4. Test Mode

The test mode can be set by turning the power supply on while pressing S002 (TEST) on the SY-50 board. The following operations will be carried out when the buttons of the operating switch block are pressed at the test mode.

SY-50 board Parts view

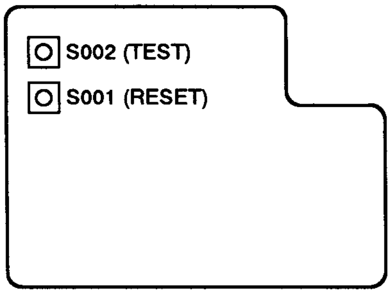


Fig. 9-5

Demonstration ······ Generates the stair step pattern for head voltage adjustments. (It is displayed after 5 seconds since the button has been pressed.)

∧ ······ Head 1 up. The thermal head moves up one position each time this button is pressed.

1. Home position (Initial position)
↓
2. Ribbon rewinding position
↓
3. Paper feed position
↓
4. Loading position
↓
5. Printing position

∨ ······ Head 1 down. The thermal head goes down one position each time this button is pressed.

YES ······ Head home position. The thermal head returns to the initial position after this button is pressed.

< ······ Platen rotation. The platen motor rotates in the positive direction while this button is pressed.

> ······ Platen reversion. The platen motor rotates in the opposite direction while this button is pressed.

NO ······ Platen rotation slow. The platen motor rotates in the positive direction slowly while this button is pressed.

Note: When performing the head up/down in the test mode, be sure to do so after pressing the YES button and returning the head to the home position. If not, the head may go beyond the most top position (printing position).

9-2. POWER SUPPLY SECTION ADJUSTMENTS

1. 5V Voltage Adjustment (Power supply block)

Mode	POWER ON
Measurement Point	Pin ④ of CN1
Measuring Instrument	Digital voltmeter
Adjusting Element	VR201
Specified Value	5.0 ± 0.1 Vdc

2. 12V System Input Voltage Adjustment (Power supply block)

Mode	POWER ON
Measurement Point	Voltage between pins of CN8
Measuring Instrument	Digital voltmeter
Adjusting Element	VR301
Specified Value	13.05 ± 0.05 Vdc

3. Power Supply Voltage Checks (Power supply block)

Mode	POWER ON
Measuring Instrument	Digital voltmeter
12V. UR voltage check	
Measurement Point	Pin ① of CN2
Specified Value	12.0 ± 0.1 Vdc
12V voltage check	
Measurement Point	Pin ③ of CN1
Specified Value	12.0 ± 0.1 Vdc
S12V voltage check	
Measurement Point	Pin ① of CN1
Specified Value	12.0 ± 0.1 Vdc
S9V voltage check	
Measurement Point	Pin ② of CN1
Specified Value	9.0 ± 0.1 Vdc
S5V voltage check	
Measurement Point	Pin ④ of CN2
Specified Value	5.0 ± 0.1 Vdc

4. Head Power Supply Adjustment (Power supply block)

It is necessary to perform "Head Voltage Adjustment" if the following adjustments have been performed. It is therefore necessary to make a sample of printing density before performing adjustments. For details on how to make the sample, refer to "Head Voltage Adjustment".

4-1. 3V Reference Voltage Adjustment

Mode	POWER ON
Measurement Point	Voltage between pins of CN7
Measuring Instrument	Digital voltmeter
Adjusting Element	VR103
Specified Value	3.00 ± 0.01 Vdc

4-2. Minimum and Maximum Head Voltage Values Adjustments

Measurement Point	+: HEAD TP (H) –: HEAD TP (G)
Measuring Instrument	Digital voltmeter
Adjusting Element	Minimum value: VR101 Maximum value: VR102
Specified Value	Minimum value: 15.15 ± 0.06 Vdc Maximum value: 23.10 ± 0.10 Vdc

Preparation: Adjust the regulated power output voltage to 4.0 ± 0.1 Vdc, and prepare to connect it to Pin ⑧ of CN3.

Adjusting method:

1) Remove the AC plug from the outlet.
2) Remove CN1, 2, 3, 4.
3) Connect the AC plug to the outlet.
4) Connect Pin ⑧ (V CONT) of CN3 to Pin ⑦ (GND) with a jumper wire.
5) Adjust the HEAD TP voltage to 15.15 ± 0.06 Vdc with VR101.
6) Remove the jumper wire between Pin ⑧ of CN3 and Pin ⑦.
7) Connect the 4 Vdc power supply to Pin ⑧ of CN3 (V CONT).
8) Adjust the HEAD TP voltage to 23.10 ± 0.10 Vdc with VR102.
9) Disconnect the 4 Vdc power supply of Pin ⑧ of CN3.
10) Remove the AC plug from the outlet.
11) Connect CN1, 2, 3, 4.
12) Perform "Head Voltage Adjustment".

5. Head Voltage Adjustment (Power supply block)

Before beginning, use the old head (Note 1) or a normal set to print two continuous stair step patterns (Note 2). Use the second piece as the sample of printing density.

Note 1) Used only when the bad contents of the old head (damaged head) are not completely damaged by the black and white line and so on.
2) Refer to "Test Mode" for how to generate the stair step pattern.

Mode	Test
Measurement Point	+: TP1 (H) –: TP2 (G)
Measuring Instrument	Digital voltmeter
Adjusting Element	VR101
Specified Value	Coarse adjustment: Refer to Table 9-1 Fine adjustment: The printing density should be the same as that of the sample.

Adjusting method:

1) While pressing S002 (TEST) on the SY-50 board, press the Power button on the front panel and turn on the power supply. (Test mode setting)
2) Press the Demonstration button of the operating switch block. (After 5 seconds, the stair step pattern appears on the monitor screen.)
3) Set S801 on the HC-10 board to the "adjust" position (thermistor TH1 side).
4) Adjust the head voltage (voltage between TP1 and TP2) to the specified value of head voltage coarse adjustment (refer to Table 9-1) with VR101.
5) Set S801 on the HC-10 board to the "Normal" position (CN1 side).
6) After specifying the printing number as 2 on the menu display, press the Print button, and print the stair step pattern on two sheets continuously.
7) Compare the density of the second print to that of the sample, and perform the following adjustments if the densities are different.
8) Set S801 on the HC-10 board to the "Adjust" position.
9) Adjust VR101 as follows according to the printing density.
   Darker than the sample: Decrease the head voltage.
   Lighter than the sample: Increase the head voltage.
10) Set S801 on the HC-10 board to the "Normal" position.
11) Print the stair step pattern on two sheets continuously.
12) Compare the density of the second print to that of the sample, and repeat steps 8 to 12 if the densities are different.
   Note: Only one print will be required after the second time.
13) Check that S801 on HC-10 board is at the "Normal" position.

Coarse Adjustment Specification Table

Calculate the head voltage coarse adjustment specified value from the resistance values of the thermal head using the following table. The resistance value is written on the label pasted on the thermal head.

Thermal head resistance value (Ω)	Head voltage coarse adjustment specified value (Vdc)
Less than 1749	17.26 ± 0.04
Less than 1750 to 1759	17.30 ± 0.04
Less than 1760 to 1769	17.34 ± 0.04
Less than 1770 to 1779	17.38 ± 0.04
Less than 1780 to 1789	17.42 ± 0.04
Less than 1790 to 1799	17.46 ± 0.04
Less than 1800 to 1809	17.50 ± 0.04
Less than 1810 to 1819	17.54 ± 0.04
Less than 1820 to 1829	17.58 ± 0.04
Less than 1830 to 1839	17.62 ± 0.04
Less than 1840 to 1849	17.66 ± 0.04
Less than 1850 to 1859	17.70 ± 0.04
Less than 1860 to 1869	17.74 ± 0.04
Less than 1870 to 1879	17.78 ± 0.04
Less than 1880 to 1889	17.82 ± 0.04
Less than 1890 to 1899	17.86 ± 0.04
Less than 1900 to 1909	17.90 ± 0.04
Less than 1910 to 1919	17.94 ± 0.04
Less than 1920 to 1929	17.98 ± 0.04
Less than 1930 to 1939	18.02 ± 0.04
Less than 1940 to 1949	18.06 ± 0.04
Above 1950	18.10 ± 0.04

Table 9-1

Stair Step Pattern

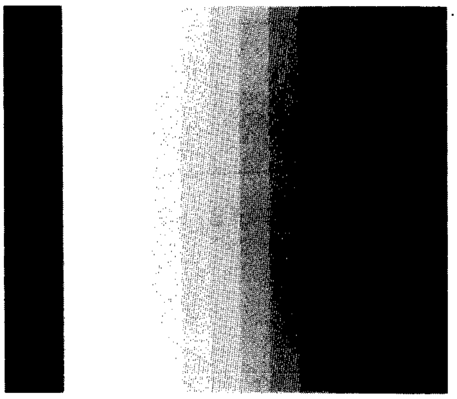


Fig. 9-5

9-3. MECHANISM BLOCK AND SYSTEM CONTROL CIRCUIT ADJUSTMENTS

1. Replacing the Thermal Head

1) Before replacing the head, print the stair step pattern using the old head (faulty head).

   Note 1) Used only when the bad contents of the head are not completely damaged by the black and white line and so on.

   2) Refer to "Test Mode" for details on how to generate the stair step pattern.

2) Remove the bottom cover.
3) Remove the head guide (S) ❶.
4) Remove the heat sink ❷.
5) Remove the thermal head connector as shown in Fig. C.
6) Replace the thermal head.
7) Assemble in the reverse order.
8) Perform "Head Voltage Adjustment" of power supply section adjustments.

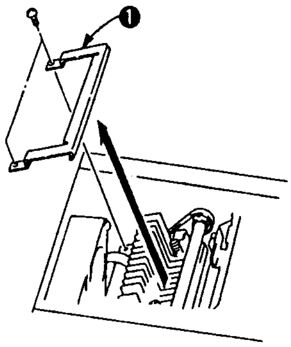


Fig. A

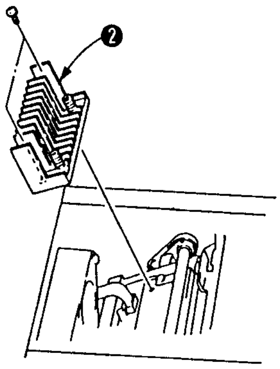


Fig. B

- Removing the connector

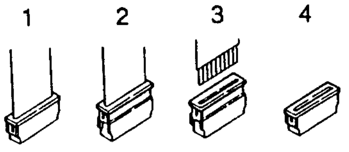


Fig. C

Fig. 9-7

2. Head End Point Position Check

Mode	Test
Signal	Not required
Measurement Point	0.7 mm and 1.1 mm clearance gauges
Measuring Instrument	Clearance should be above 0.7 mm but below 1.1 mm

Checking method:

1) Remove the ribbon cassette.
2) While pressing S002 (TEST) on the SY-50 board, turn on the power supply. (Setting the test mode.)
3) Press the $\boxed{\text{YES}}$ button (head home position), and return the head to the home position.
4) Press the $\boxed{\wedge}$ (head 1 up) button four times on the operating panel block, and adjust to "Print position".
5) Insert the clearance gauges between the ribbon roller arm and stopper, and check that the 0.7 mm one passes through, and that the 1.1 mm does not.
6) Press the $\boxed{\text{YES}}$ button on the operating panel block, and return the head to the "home position".

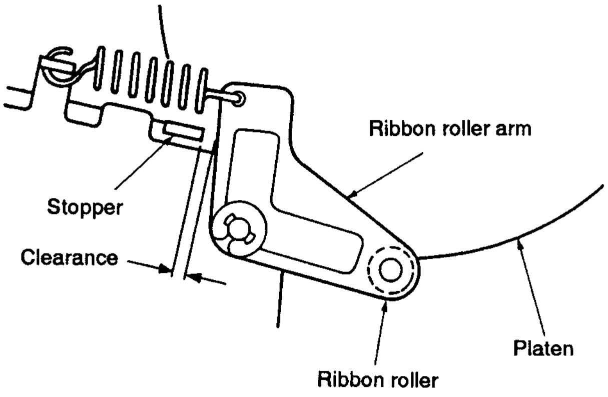


Fig. 9-8

3. Ribbon Code Sensor Adjustment (SY-50 board)

Mode	POWER ON
Signal	Not required
Measurement Point	Pin ③ of CN003 (RIBBON S)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV004
Specified Value	0.90 ± 0.06 Vdc

Adjusting method:

1) Remove the ribbon cassette.
2) Adjust the voltage of Pin ③ of CN003 (RIBBON S) to 0.90 ± 0.06 Vdc with RV004.
3) Wind up the ribbon cassette, and adjust so that the ribbon head indication mark (black) covers the ribbon sensor hole.
4) Set the ribbon cassette on the unit.
5) Check that the voltage of Pin ③ of CN003 is above 3.5 Vdc.
6) Remove the ribbon cassette, and rewind it so that the "Ribbon head indication mark" comes to the center.

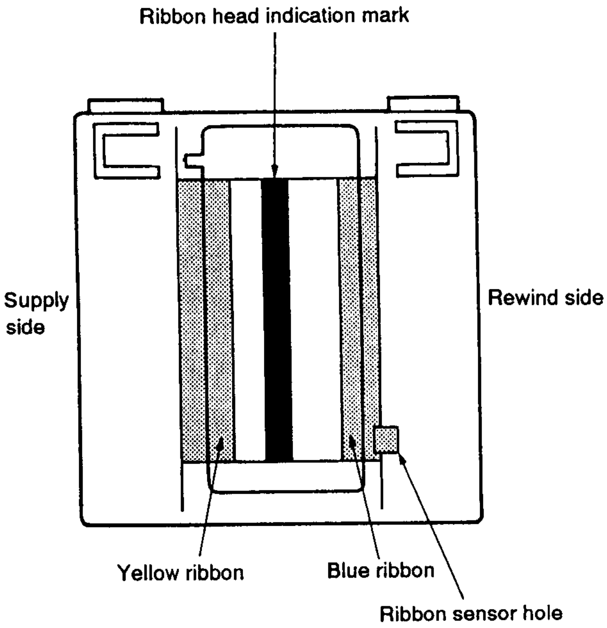


Fig. 9-9 Ribbon Cassette

4. Paper Set Sensor DNP Adjustment (SY-50 Board)

Mode	Test
Signal	Not required
Measurement Point and Measuring Instrument	Digital voltmeter Pin ④ of CN016 (P SET SEN) Oscilloscope (DC range) Pin ② of CN003 (P LOAD SEN)
Adjusting Element	RV002
Specified Value	2.20 ± 0.06 Vdc

Note: Remove the ribbon cassette.

Adjusting method:

1) Set the postcard printing paper on the paper feed tray, and attach it to the unit.
2) While pressing S002 on the SY-50 board (TEST), turn on the power supply. (Setting the test mode.)
3) Press the $\boxed{\text{YES}}$ button (head home position) on the operating block panel, and return the head to the home position.
4) Check that the voltage of Pin ② of CN003 (P LOAD SEN) is above 4 Vdc.
5) Press the $\boxed{\wedge}$ button (head 1 up) on the operating block panel twice, and adjust it to "paper feed position".
6) Press the $\boxed{>}$ (platen reversion) continuously until the voltage of Pin ② of CN003 (P LOAD SEN) decreases below 2.2 Vdc.
7) Press the $\boxed{\wedge}$ (head 1 up) button twice, and adjust to "Print position".
8) Press the $\boxed{<}$ (platen rotation) button continuously, and wind the print paper around the platen. Stop pressing when the adjusting mark of the print paper is on the left end of the platen when viewed from the front of the unit.
9) Adjust the voltage of Pin ④ of CN016 (P SET SEN) to 2.20 ± 0.06 Vdc with RV002.
10) Press the $\boxed{>}$ (platen reversion) button continuously until the print paper flows out.
11) Press the $\boxed{\text{YES}}$ button, and return the head to the "home position".

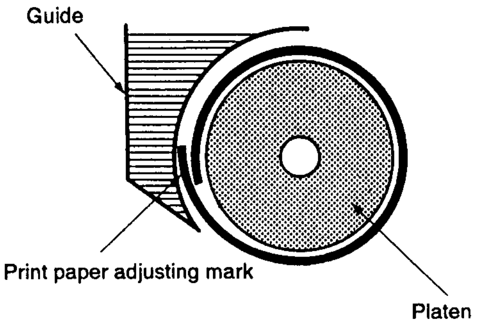


Fig. 9-10

5. FG Sensor Adjustment (SY-50 Board)

Mode	Test
Signal	Not required
Measurement Point	Pin ③ of CN016 (FG SEN)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV003
Specified Value	V1=3.0 ± 0.2 Vdc V2=Above 2.0 Vp-p

Adjusting method:

1) While pressing S002 on the SY-50 board (TEST), turn on the power supply. (Setting the test mode)
2) While pressing the [<] (platen rotation) button, adjust V1 to 3.0 ± 0.2 Vdc with RV003. Check that V2 is above 2.0 Vp-p at the same time.

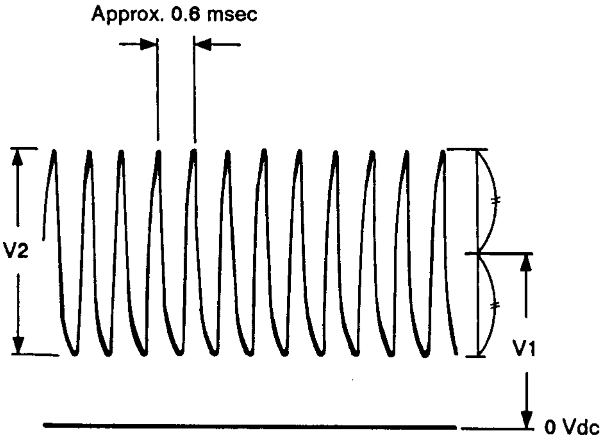


Fig. 9-11

6. Line Pulse Adjustment (SY-50 board)

Mode	POWER ON, Print
Signal	Arbitrary
Measurement Point	TP015 (Pin ⑪ of CN018: TIMING PULSE)
Measuring Instrument	Oscilloscope (DC range) Trigger mode: NORMAL
Adjusting Element	RV001
Specified Value	T1=18.5 ± 0.5 msec

Note: Be sure to perform head voltage adjustment after this adjustment.

Adjusting method:

1) Record the arbitrary signal in the memory, and press the [Print] button.
2) Adjust the TIMING PULSE cycle (T1) of the printing period to the specified value with RV001.

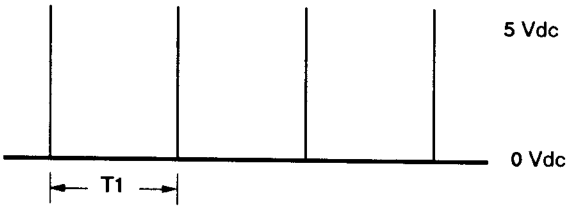


Fig. 9-12

9-4. VIDEO CIRCUIT ADJUSTMENT

Perform the adjustments in their listed order. Before beginning, check that the input signal satisfies the specifications shown in Fig. 9-2, 9-3 and 9-4.
Check that the Auto picture (AGC) on the operating block panel is at the "Off" position.

1. THRU VIDEO Output Level Adjustment (VA-69 board)

Mode	Standby
Signal	Color bar (Video input)
Measurement Point	TP124 (Terminate the video output terminal of CNJ101 at 75Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	RV105
Specified Value	A=1.00 ± 0.03V

Note: Check that nothing has been inserted into both the front and rear S video input terminals.

Adjusting method:
1) Check that the power display lamp is red.
2) Adjust the video level (A) to the specified value with RV105.

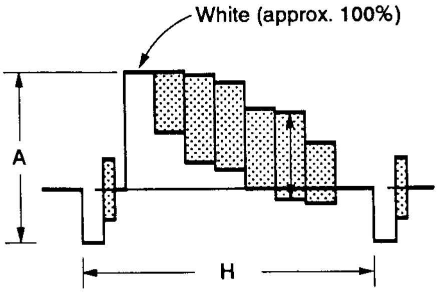


Fig. 9-13

2. THRU Y Output Level Adjustment (VA-69 Board)

Mode	Standby
Signal	Color bar with white 100% (S video input)
Measurement Point	TP118 (Terminate the S video Y output terminal of CNJ101 at 75Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	RV101
Specified Value	A=1.00 ± 0.03V

Adjusting method:
1) Check that the power supply display lamp is red.
2) Adjust the Y level (A) to the specified value with RV101.

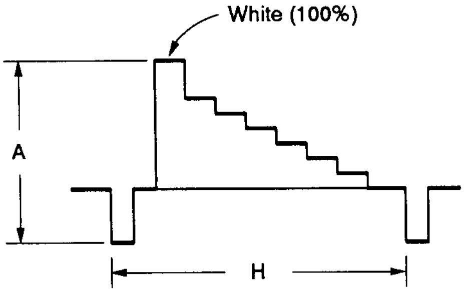


Fig. 9-14

3. THRU CHROMA Output Level Adjustment (VA-69 board)

Mode	Standby
Signal	Color bar with white 100% (S video input)
Measurement Point	TP121 (Terminate the S video chroma output terminal of CNJ101 at 75 Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	RV102
Specified Value	A=300 ± 10 mVp-p

Adjusting method:
1) Check that the power supply display lamp is red.
2) Adjust the burst level (A) to the specified value with RV102.

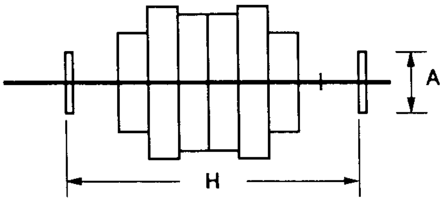


Fig. 9-15

4. Y/C Mix Ratio Adjustment (VA-69 board)

Mode	Standby
Signal	Color bar with white 100% (S video input)
Measurement Point	TP124 (Terminate the video output terminal of CNJ101 at 75Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	Y level: RV104 Chroma level: RV103
Specified Value	Y level: A=1.00 ± 0.03V Chroma level: B=300 ± 10 mVp-p

Adjusting method:

1) Check that the power supply display lamp is red.
2) Adjust the Y level (A) to the specified value with RV104.
3) Adjust the burst level (B) to the specified value with RV103.
4) Repeat steps 2) and 3).

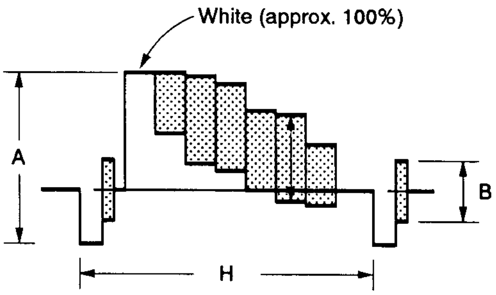


Fig. 9-16

5. Y/C Separation Y Level Adjustment (VA-69 board)

Mode	Standby
Signal	Color bar with white 100% (video input)
Measurement Point	TP118 (Terminate the S video Y output terminal of CNJ101 at 75Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	RV203
Specified Value	A=1.00 ± 0.03V

Note: Check that nothing has been inserted into both the front and rear S video input terminals.

Adjusting method:

1) Check that the power supply display lamp is red.
2) Adjust the Y level (A) to the specified value with RV203.

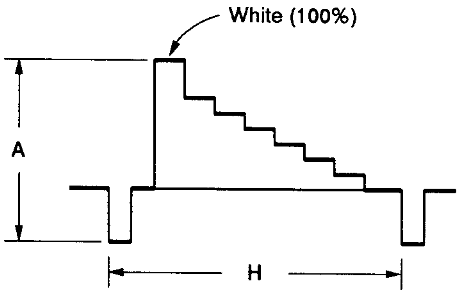


Fig. 9-17

6. Y/C Separation CHROMA Level Adjustment

Mode	Standby
Signal	Color bar with white 100% (video input)
Measurement Point	TP121 (Terminate the S video chroma output terminal of CNJ101 at 75 Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202
Specified Value	A=300 ± 10 mV

Note: Check that nothing has been inserted into both the front and rear S video input terminals.

Adjusting method:
1) Check that the power supply display lamp is red.
2) Adjust the burst level (A) to the specified value with RV202.

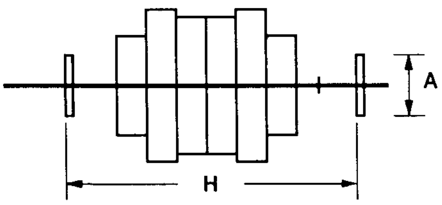


Fig. 9-18

7. Decoder Free-run Frequency Adjustment (VA-69 board)

Mode	POWER ON
Signal	Non-signal (Remove all input cables.)
Measurement Point	TP201 hole (Pin (79) of IC204)
Measuring Instrument	Frequency counter
Adjusting Element	CT401
Specified Value	f=4433619 ± 10 Hz

Connection:
1) Remove the power supply cord, and connect Pin ① and Pin ② of CN401 with a jumper wire.

Adjusting method:
1) Insert the power supply cord.
2) Adjust the decoder fsc frequency (f) to the specified value with CT401.
3) Remove the jumper wire.

8. INT Sync Generator Free-run Frequency Adjustment (VA-69 board)

Mode	POWER ON
Signal	Non-signal (Remove all input cables.)
Measurement Point	TP803 hole (Pin ⑤ of IC801)
Measuring Instrument	Frequency counter
Adjusting Element	CT601
Specified Value	f=4433619 ± 3 Hz

Adjusting method:
1) Adjust the encoder fsc frequency (f) to the specified value with CT601.

9. INT Sync Generator FH ERROR Adjustment (VA-69 board)

Mode	POWER ON
Signal	Non-signal (Remove all input cables.)
Measurement Point	TP662
Measuring Instrument	Digital voltmeter
Adjusting Element	CT604
Specified Value	A=2.5 ± 1.0 Vdc

Adjusting method:
1) Adjust the FH ERROR voltage (A) to the specified value with CT604.

10. AFC Error Adjustment (VA-69 board)

Mode	POWER ON
Signal	Non-signal (Remove all input cables.)
Measurement Point	TP650 hole (Pin ⑪ of IC605)
Measuring Instrument	Digital voltmeter
Adjusting Element	CT603
Specified Value	A=2.5 ± 0.1 Vdc

Note: Perform this adjustment more than 5 minutes after the power supply has been turned on (plug into the outlet).

Adjusting method:
1) Adjust the AFC error voltage (A) to the specified value with CT603.

11. AFH Phase Adjustment (VA-69 board)

Mode	POWER ON
Signal	Non-signal (Remove all input cables.)
Measurement Point	CH1: TP709 (Pin ① of IC612) CH2: TP663 (Pin ③ of IC616)
Measuring Instrument	Oscilloscope
Adjusting Element	RV602
Specified Value	T=2.5 ± 0.1 μsec

Adjusting method:

1) Adjust the phase difference (T) to the specified value with RV602.

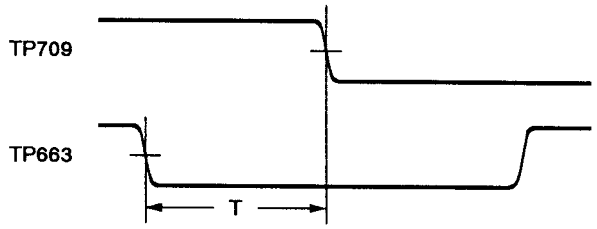


Fig. 9-19

12. U Adjustment (VA-69 board)

Mode	POWER ON
Signal	Color bar with white 100% (S video input)
Measurement Point	CH1: TP415 (Pin ⑤ of IC403) CH2: Pin ② of IC803
Measuring Instrument	Oscilloscope TRIGGER SOURCE: CH2
Adjusting Element	RV402, T401
Specified Value	1. A level is minimum 2. A=B ± 3 mV

Adjusting method:

1) Adjust the A level to minimum with RV402.
2) Adjust the level difference of A and B to minimum with T401.
3) Repeat steps 1) and 2).

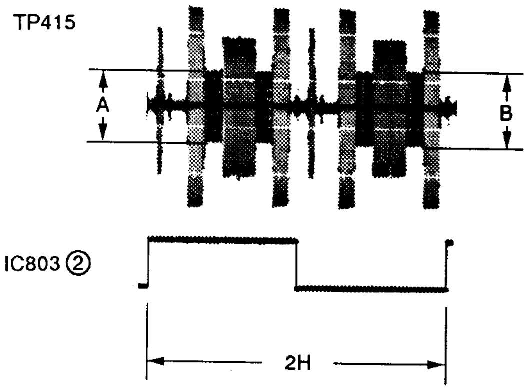


Fig. 9-20

13. Decoder PHASE/COLOR Adjustment (VA-69 board)

13-1. Decoder PHASE Adjustment

Mode	POWER ON, Through picture
Signal	Color bar with white 75% (S video input)
Measurement Point	TP414 (Pin ㊲ of IC403)
Measuring Instrument	Oscilloscope
Adjusting Element	RV401
Specified Value	"White (75%)", "Cyan", "Magenta", and "Blue" should be in line.

Adjusting method:

1) Line the levels of "White (75%)", "Cyan", "Magenta", and "Blue" up as shown in the figure with RV401.

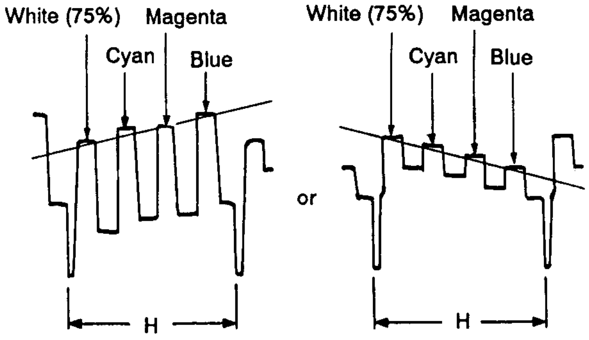


Fig. 9-21

13-2. Decoder Color Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 75% (S video input)
Measurement Point	TP414 (Pin ㊲ of IC403)
Measuring Instrument	Oscilloscope
Adjusting Element	RV403
Specified Value	"White (75%)", "Cyan", "Magenta", and "Blue" should be in a horizontal line.

Adjusting method:

1) Line the levels of "White (75%)", "Cyan", "Magenta", and "Blue" up horizontally with RV403. (If necessary, adjust RV404 finely as well.)

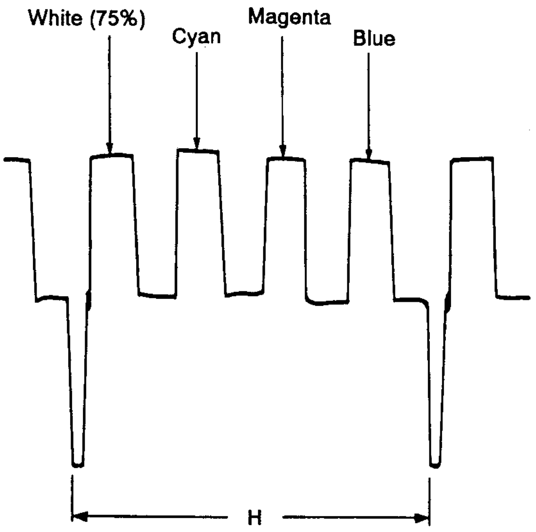


Fig. 9-22

14. Decoder Output Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP504 (Pin ⑦ of IC501)
Measuring Instrument	Oscilloscope
Adjusting Element	RV410
Specified Value	A=0.70 ± 0.03V

Adjusting method:

1) Set the Auto picture (AGC) switch to the "Off" position.
2) Adjust the white (100%) level (A) to the specified value with RV410.

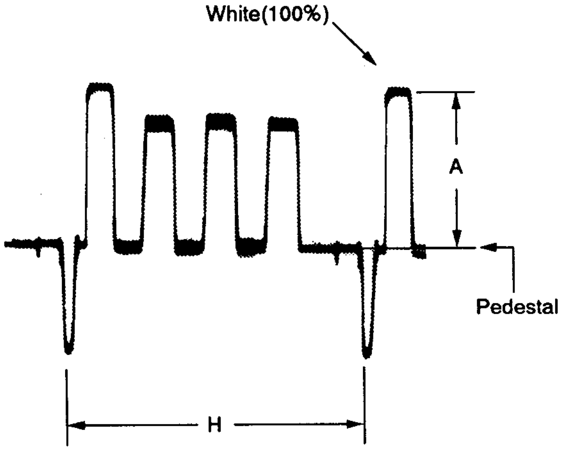


Fig. 9-23

15. AGC Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP504 (Pin ⑦ of IC501)
Measuring Instrument	Oscilloscope
Adjusting Element	RV409
Specified Value	A=0.70 ± 0.03V

Note: Do not adjust RV408.

Adjusting method:

1) Set the Auto picture (AGC) switch to the "On" position.
2) Adjust the white (100%) level (A) to the specified value with RV409.
3) Return the Auto picture switch to the "Off" position.

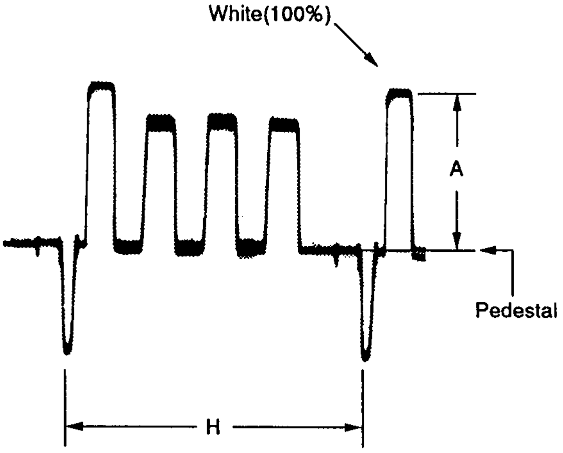


Fig. 9-24

16. CHROMA UP Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 75% (S video input)
Measurement Point	TP504 (Pin ⑦ of IC501)
Measuring Instrument	Oscilloscope
Adjusting Element	RV403
Specified Value	A=85 ± 15 mV

Adjusting method:

1) Adjust the level difference (A) of "White (75%)" and "Blue" to the specified value with RV403.

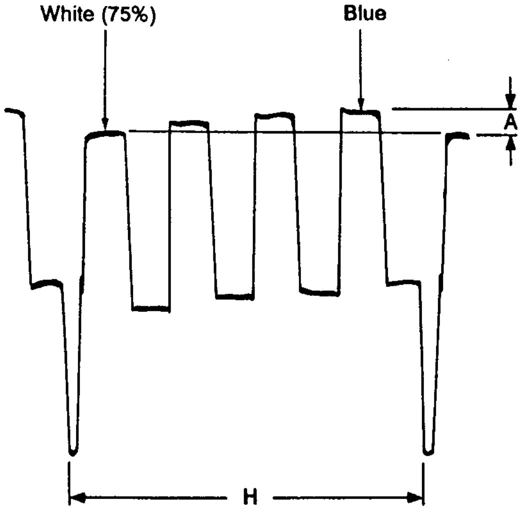


Fig. 9-25

17. Red Pedestal Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP506 (Pin ① of CN403)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV503
Specified Value	A=3.10 ± 0.03 Vdc^{Note}

Note: The deviation for the pedestal levels of blue and green is below 0.03V.

Adjusting method:

1) Adjust RV504 to the mechanical center position.
2) Adjust the pedestal level (A) immediately after the V blanking period to the specified value with RV503.

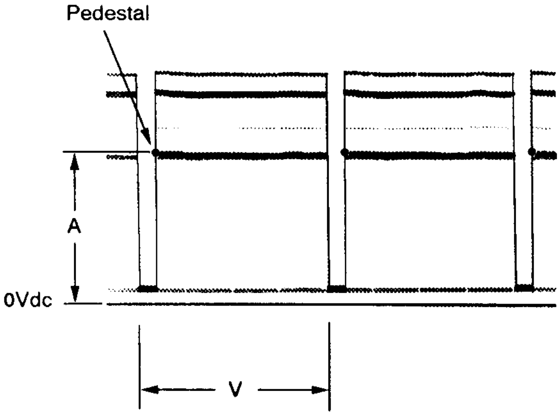


Fig. 9-26

18. Blue Pedestal Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP508 (Pin ⑤ of CN403)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV507
Specified Value	A=3.10 ± 0.03 Vdc$^{\text{Note}}$

Note: he deviation for the pedestal levels of red and green is below 0.03V.

Adjusting method:

1) Adjust RV508 to the mechanical center position.
2) Adjust the pedestal level (A) immediately after the V blanking period to the specified value with RV507.

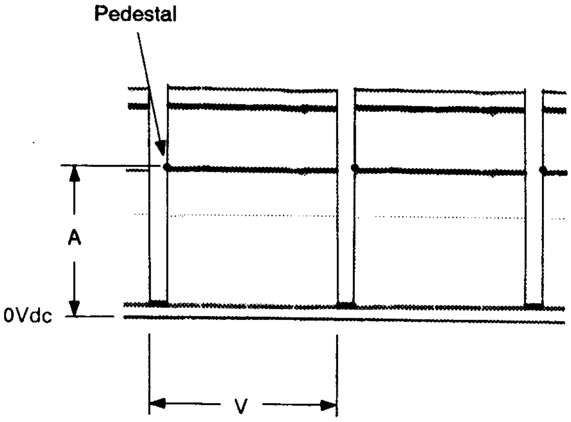


Fig. 9-27

19. Green Pedestal Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP507 (Pin ③ of CN403)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV505
Specified Value	A=3.10 ± 0.03 Vdc$^{\text{Note}}$

Note: The deviation for the pedestal levels of red and blue is below 0.03V.

Adjusting method:

1) Adjust RV506 to the mechanical center position.
2) Adjust the pedestal level (A) immediately after the V blanking period to the specified value with RV505.

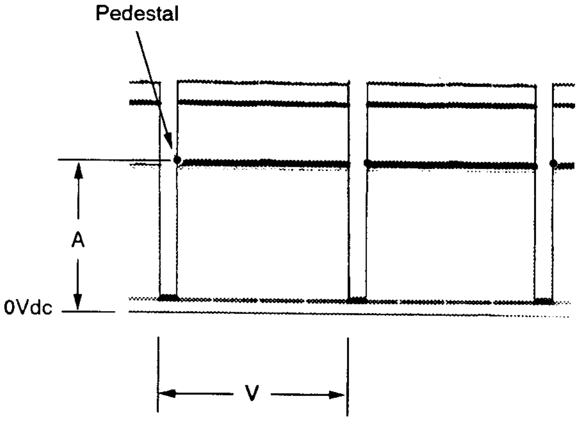


Fig. 9-28

20. Green Bright Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	1. Pin ⑧ of CN403 2. TP507 (Pin ③ of CN403)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV502
Specified Value	A=VMRB level ± 0.02 Vdc

Adjusting method:

1) Connect the oscilloscope to Pin ⑧ of CN403, and check the VMRB level (approx. 3.1 Vdc).
2) Connect the oscilloscope to TP507 (Pin ③ of CN403) next.
3) Equalize the pedestal level (A) immediately before the horizontal sync signal to the VMRB level with RV502.

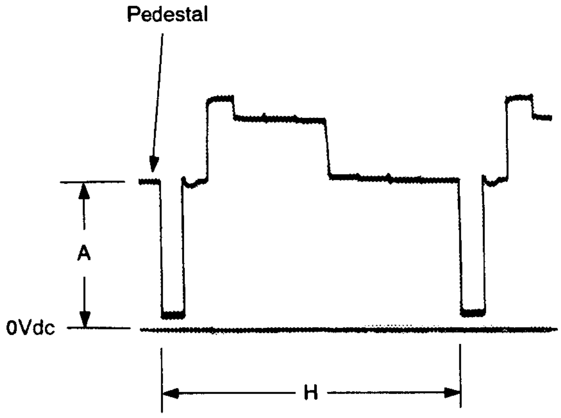


Fig. 9-29

21. Green Picture Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP507 (Pin ③ of CN403)
Measuring Instrument	Oscilloscope
Adjusting Element	RV501
Specified Value	A=1.80 ± 0.02 Vdc

Adjusting method:

1) Adjust the level difference (A) between the picture level (White (100%)) and pedestal to the specified value with RV501.

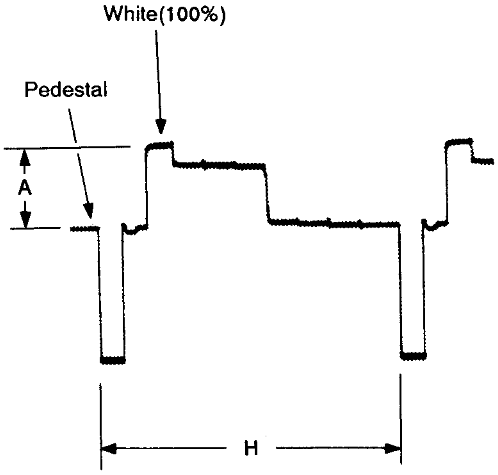


Fig. 9-30

22. S/V Ratio Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP118 (Terminate the Y terminal of the S video output of CNJ101 at 75Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	Picture level: RV707 SYNC level: RV706
Specified Value	Picture level: 700 ± 20 mV SYNC level: 300 ± 10 mV

Adjusting method:

1) Check that the Memory picture lamp is lit out.
2) Adjust the picture level (A) to the specified value with RV707.
3) Adjust the SYNC level (B) to the specified value with RV706.
4) Repeat steps 2), and 3).

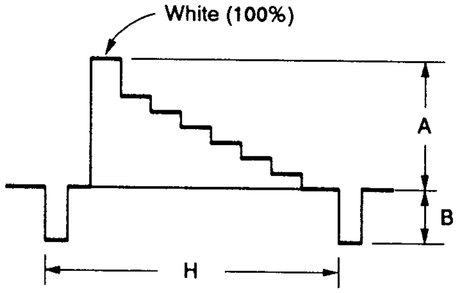


Fig. 9-31

23. Black/White Balance and Carrier Balance Adjustments (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope (Terminated at 75Ω)
Adjusting Element	Black/white balance: RV801, 803 Carrier balance: RV805, 806
Specified Value	The black, white and carrier balance luminance points should coincide with the origin point.[Note]

Note: The luminance point should be within the circumference of a circle with a diameter of 4 mm, and whose origin is taken to be its center.

Adjusting method:

1) Check that the Memory picture lamp is lit out.
2) Adjust the vectorscope GAIN to maximum.
3) Coincide the black and white luminance points to the carrier balance luminance point with RV801 and 803.
4) Coincide the carrier balance luminance point to the vectorscope origin point with RV805 and 806.
5) Repeat steps 3) and 4).

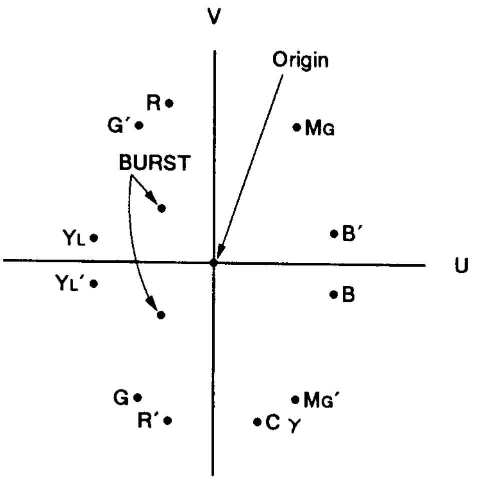


Fig. 9-32

24. Burst Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	Video output terminal
Measuring Instrument	Vector scope (Terminated at 75Ω)
Adjusting Element	RV809, CT801
Specified Value	75% burst standard position

Adjusting method:

1) Adjust RV807 to the mechanical center position.
2) Adjust the GAIN of the vectorscope to the CAL position.
3) Adjust the burst luminance point to the 75% standard position with RV809 and CT801.

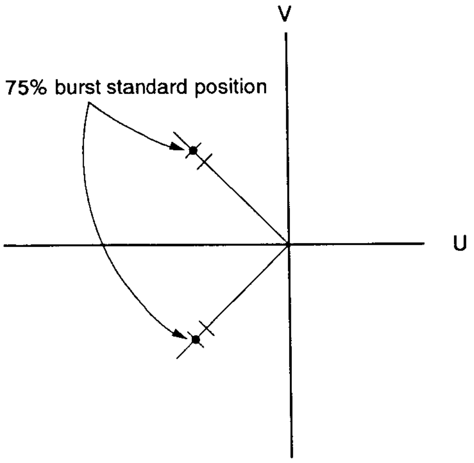


Fig. 9-33

25. B–Y, R–Y Level Adjustments (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar (S video input)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope (Terminated at 75Ω)
Adjusting Element	B–Y level: RV802 R–Y level: RV804
Specified Value	Each color luminance point of blue, yellow, green, and magenta should be within the specified frame.[Note]

Note: The center of luminance point should be within the rim of the frame. (Frame of ± 10°, ± 10%)

Adjusting method:

1) Check that the Memory lamp is lit out.
2) Adjust the GAIN of the vectorscope to the CAL position.
3) Adjust RV802 so that blue and yellow luminance points are within the specification of the vectorscope.
4) Adjust RV804 so that the green and magenta luminance points are within the specified frame of the vectorscope.
5) Repeat steps 3) and 4).

26. Chroma Level Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP121 (Terminate the S video chroma output terminal of CNJ101 at 75Ω)
Measuring Instrument	Oscilloscope
Adjusting Element	RV807
Specified Value	A=300 ± 10 mV

Adjusting method:

1) Adjust the burst level (A) to the specified value with RV807.

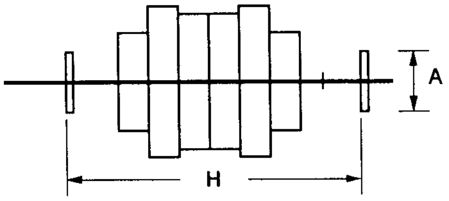


Fig. 9-34

27. Burst Position Adjustment (VA-69 board)

Mode	POWER ON, Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	TP124
Measuring Instrument	Oscilloscope
Adjusting Element	RV601
Specified Value	T=5.60 ± 0.1 μsec

Adjusting method:

1) Adjust the burst position (T) to the specified value with RV601.

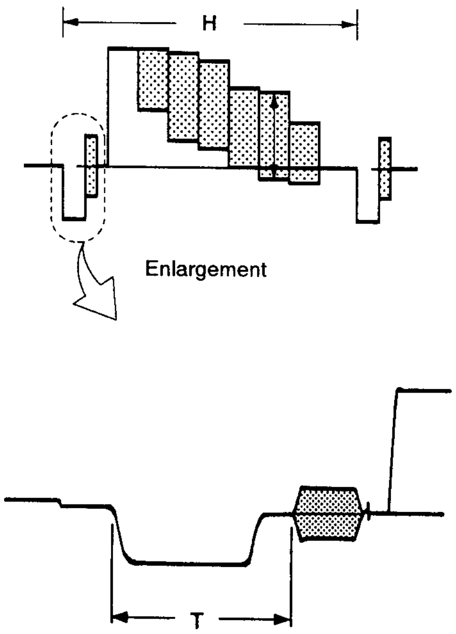


Fig. 9-35

28. OSC Adjustment (MC-80 board)

Mode	POWER ON
Signal	Arbitrary
Measurement Point	CC508 (Pin ① of IC513)
Measuring Instrument	Frequency counter
Adjusting Element	CT501
Specified Value	f=14.31818 MHz ± 10 Hz

Adjusting method:

1) Adjust the oscillation frequency (f) to the specified value with CT501.

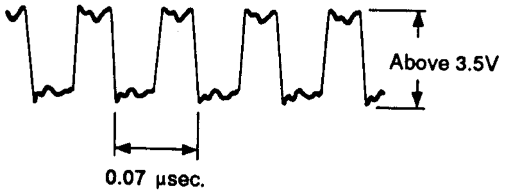


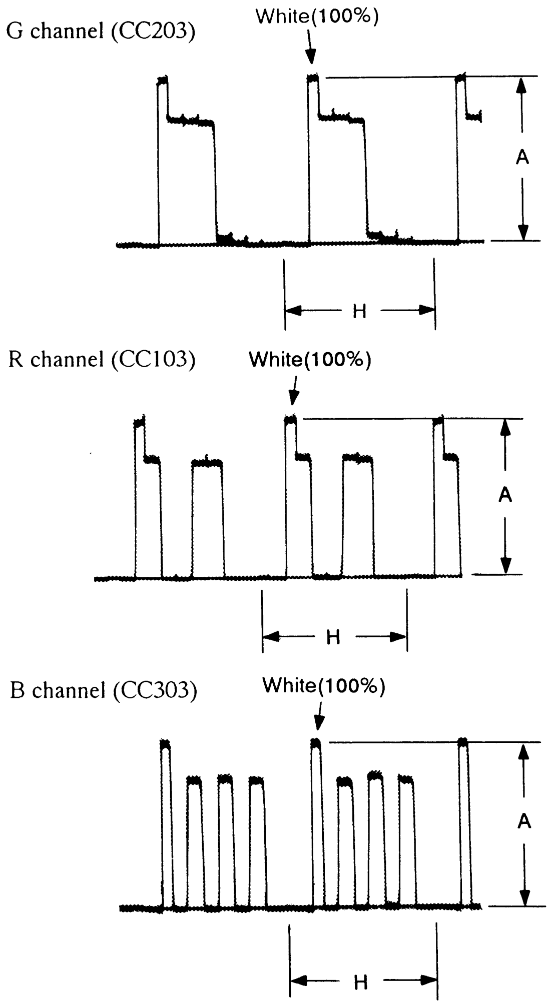
Fig. 9-36

29. G Channel D/A Output Adjustment (MC-80 board)

Mode	POWER ON, Memory picture
Signal	Color bar with white 100% (S video input)
Measurement Point	CC203 (Pin ③ of W2:MVG)
Measuring Instrument	Oscilloscope External trigger: CC518 (Pin (59) of IC508: HD) Trigger slope: –
Adjusting Element	RV401
Specified Value	A=0.90 ± 0.01V

Adjusting method:

1) Set the Auto picture (AGC) switch to the "Off" position.
2) Select "Standard" at "Picture quality adjustment" of the menu display, and execute.
3) Press the CAPTURE button, and record the signal in the memory.
4) Adjust the G channel signal level (A) to the specified value with RV401.
5) Check that the R channel signal level (A) of CC103 (Pin ① of W2: MVR) and B channel signal level (A) of CC303 (Pin ⑤ of W2: MVB) satisfy the specified value.


G channel (CC203)

R channel (CC103)

B channel (CC303)

Fig. 9-37

30. Memory Signal Level Adjustment (VA-69 board)

Mode	POWER ON, Memory picture/ Through picture
Signal	Color bar with white 100% (S video input)
Measurement Point	Oscilloscope TP707
Measuring Instrument	Vectorscope (Terminated at 75Ω) Video output terminal
Adjusting Element	R: RV701 G: RV702 B: RV703
Specified Value	Oscilloscope Level difference with the through signal=0 ± 5 mV Vectorscope The white balance luminance point should coincide with the origin point.

Adjusting method:

1) Set the Auto picture (AGC) switch to the "Off" position.
2) Select "Standard" at "Picture adjustment" of the menu display, and execute.
3) Press the CAPTURE button, and record the signal in the memory.
4) Minimize the level difference between the memory signal and through signal of TP707 (G channel) with RV702.
   Note: The memory signal and through signal can be switched using the SOURCE/MEMORY button. During memory signal output, the Memory lamp is lit.
5) Select the memory picture.
6) Adjust the GAIN of the vectorscope to maximum.
7) Rotate RV701 and RV703 alternately, and coincide the white balance luminance point to the origin point of the vectorscope.
8) Return the GAIN knob of the vectorscope to the CAL position, and check the position of each luminance point.
   Blue luminance point: ± 5% position
   Other luminance point: ± 10% position

TP707 (G channel)

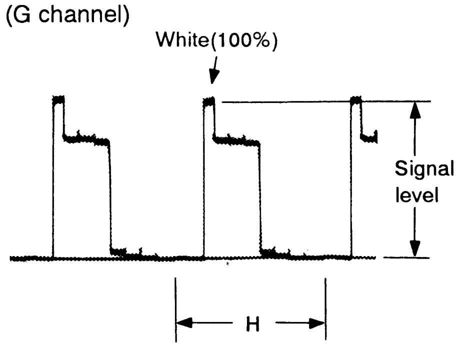
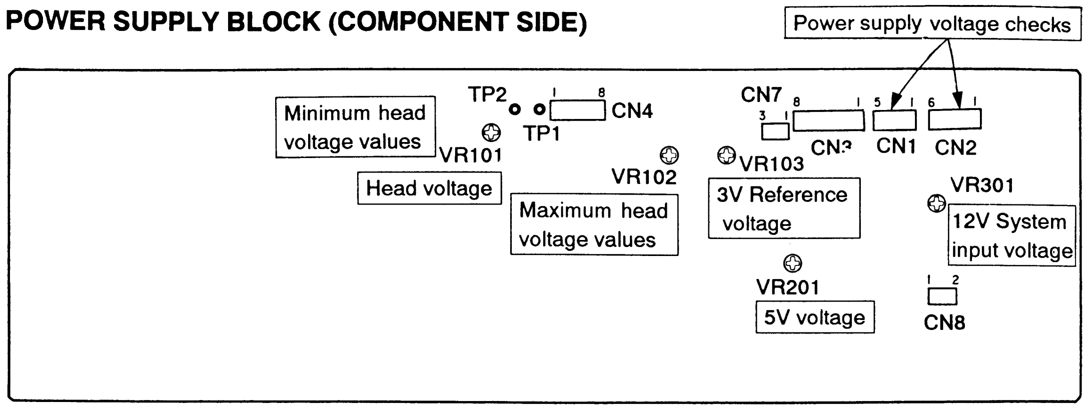


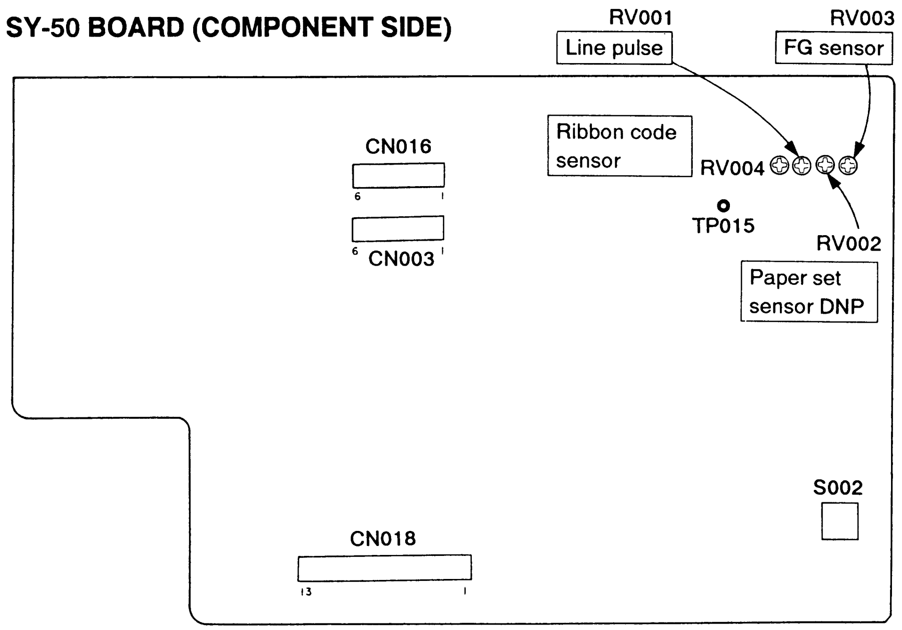
Fig. 9-38

9-5. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

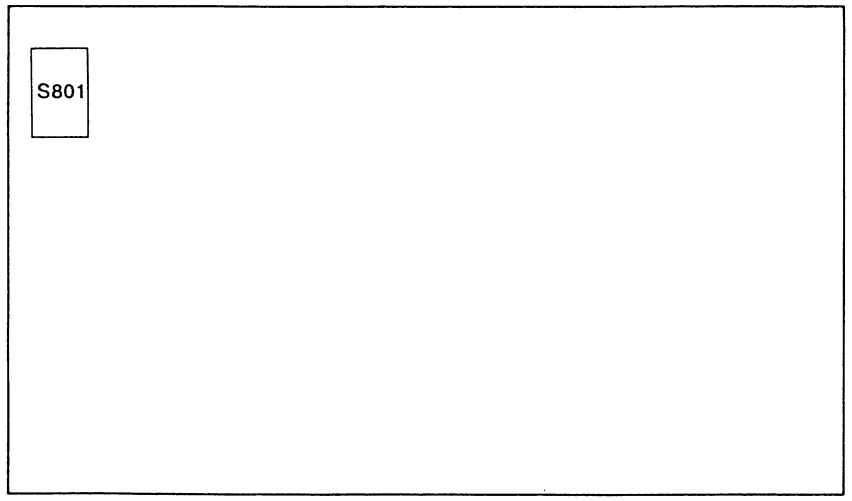
POWER SUPPLY BLOCK (COMPONENT SIDE)


Power supply voltage checks
Minimum head voltage values
TP2
TP1
CN4
VR101
Head voltage
VR102
Maximum head voltage values
CN7
CN3
CN1
CN2
VR103
3V Reference voltage
VR201
5V voltage
VR301
12V System input voltage
CN8

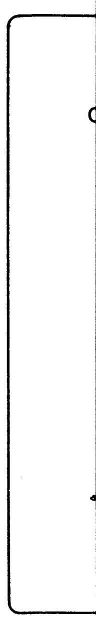
SY-50 BOARD (COMPONENT SIDE)


RV001
Line pulse
RV003
FG sensor
Ribbon code sensor
RV004
TP015
RV002
Paper set sensor DNP
CN016
CN003
CN018
S002

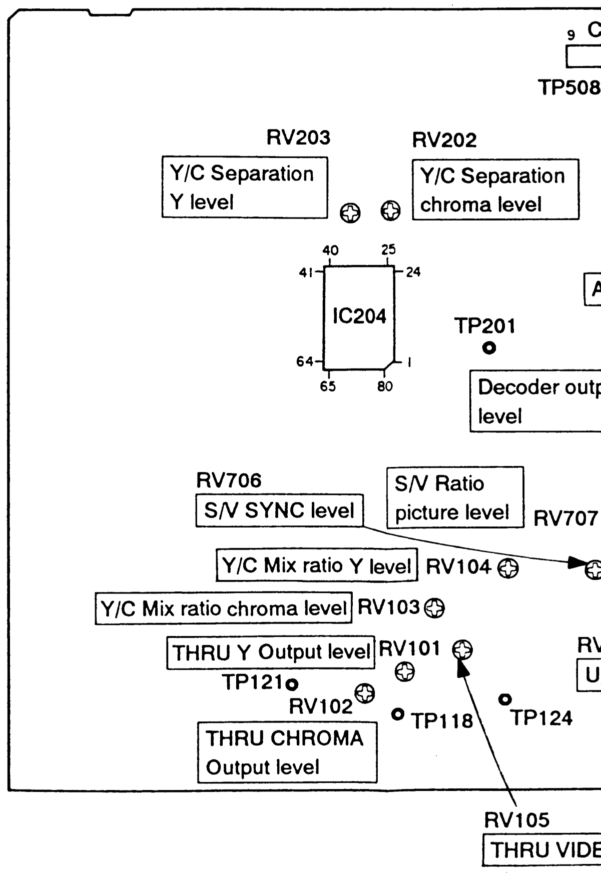
HC-10 BOARD (COMPONENT SIDE)



MC-80



VA-69 BOARD (COMPONENT SIDE)


TP508
RV203
Y/C Separation Y level
RV202
Y/C Separation chroma level
IC204
TP201
Decoder outp
level
RV706
S/V SYNC level
S/V Ratio picture level
RV707
Y/C Mix ratio Y level
RV104
Y/C Mix ratio chroma level
RV103
THRU Y Output level
RV101
TP121
RV102
TP118
TP124
THRU CHROMA Output level
RV105
THRU VIDE

9 board)

cture/

%

at 75Ω)

the through

inance point
the origin

" position.
of the menu

signal in the

emory signal
RV702.
gnal can be
DRY button.
mory lamp is

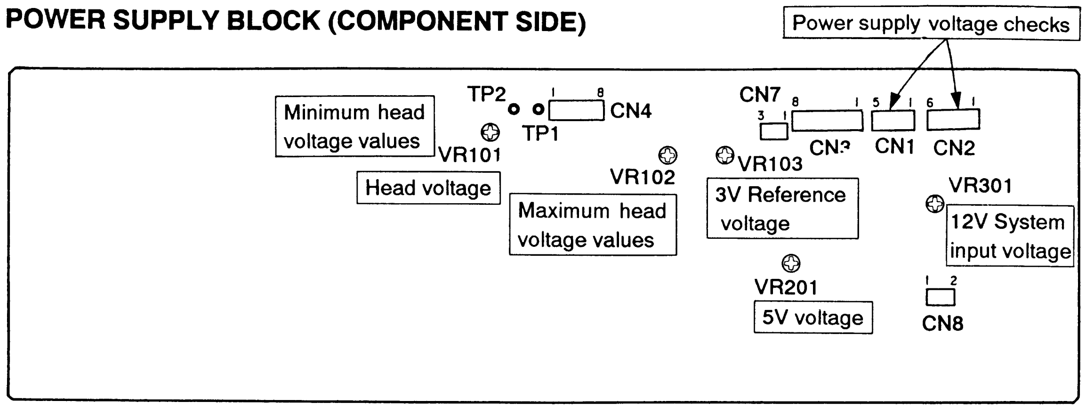
m.
coincide the
point of the

to the CAL
nce point.

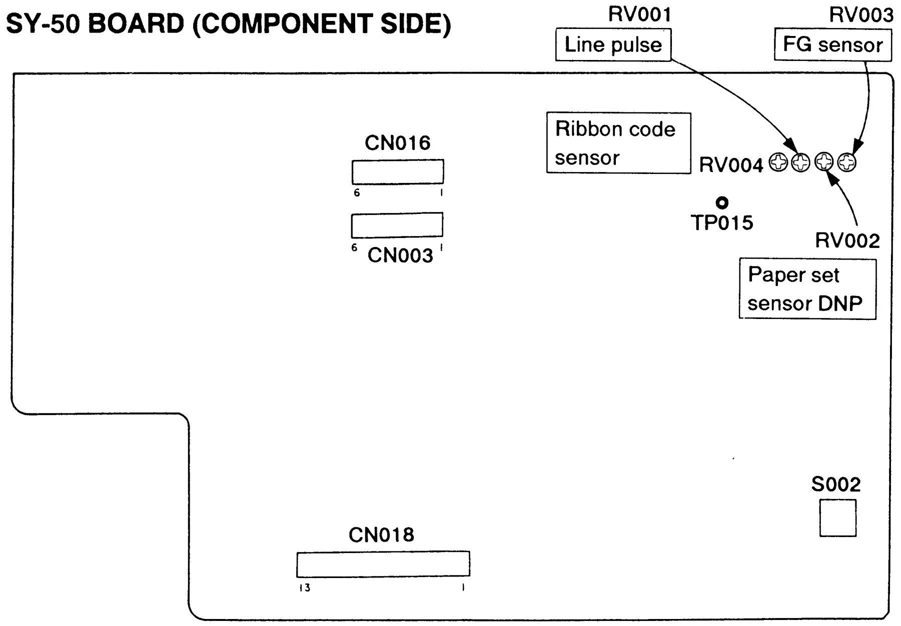
nal
l

9-5. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

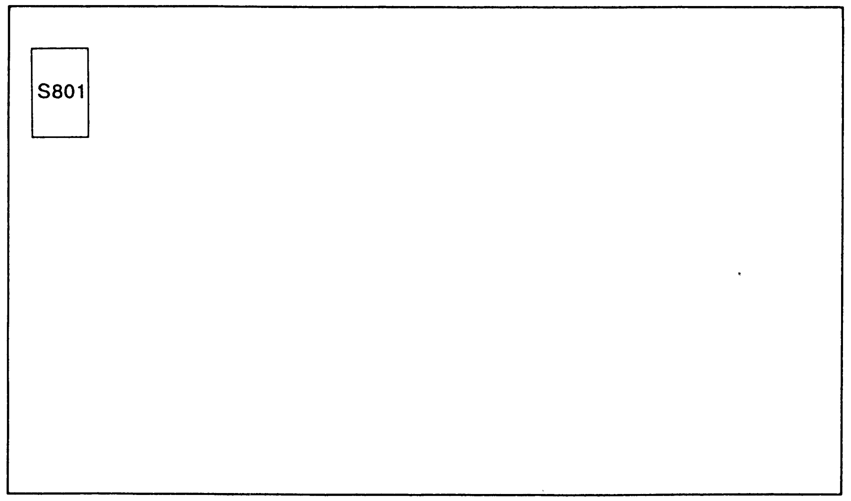
POWER SUPPLY BLOCK (COMPONENT SIDE)


Power supply voltage checks
Minimum head voltage values
TP2
TP1
CN4
VR101
Head voltage
VR102
Maximum head voltage values
CN7
VR103
CN3
CN1
CN2
3V Reference voltage
VR301
12V System input voltage
VR201
5V voltage
CN8

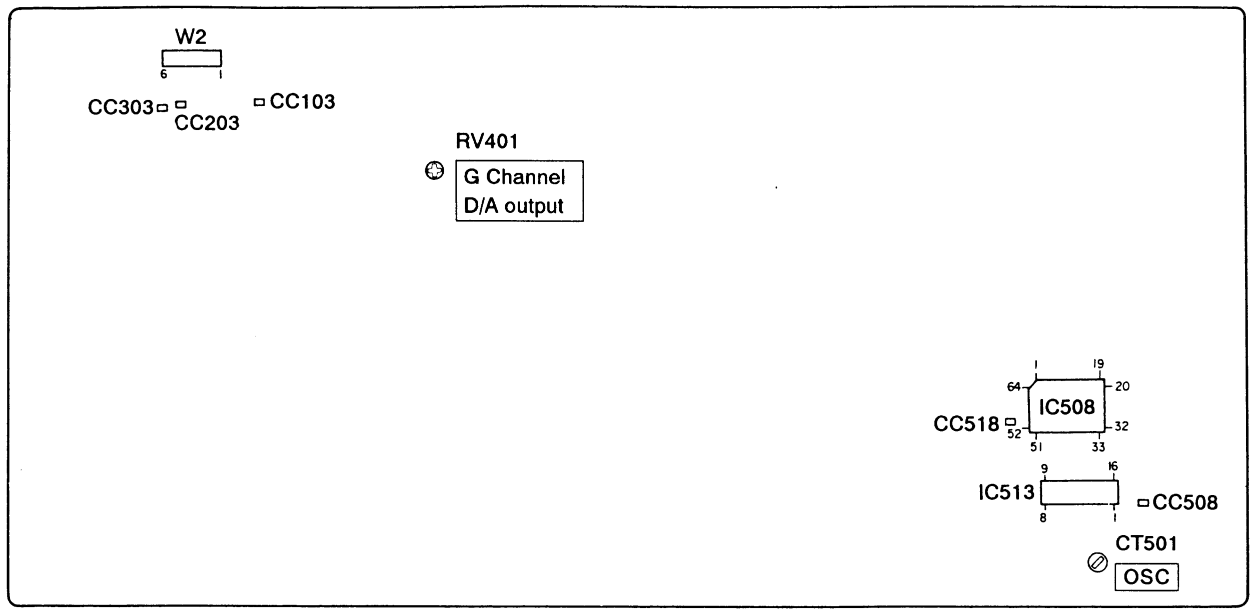
SY-50 BOARD (COMPONENT SIDE)


RV001
Line pulse
RV003
FG sensor
CN016
Ribbon code sensor
RV004
TP015
RV002
CN003
Paper set sensor DNP
S002
CN018

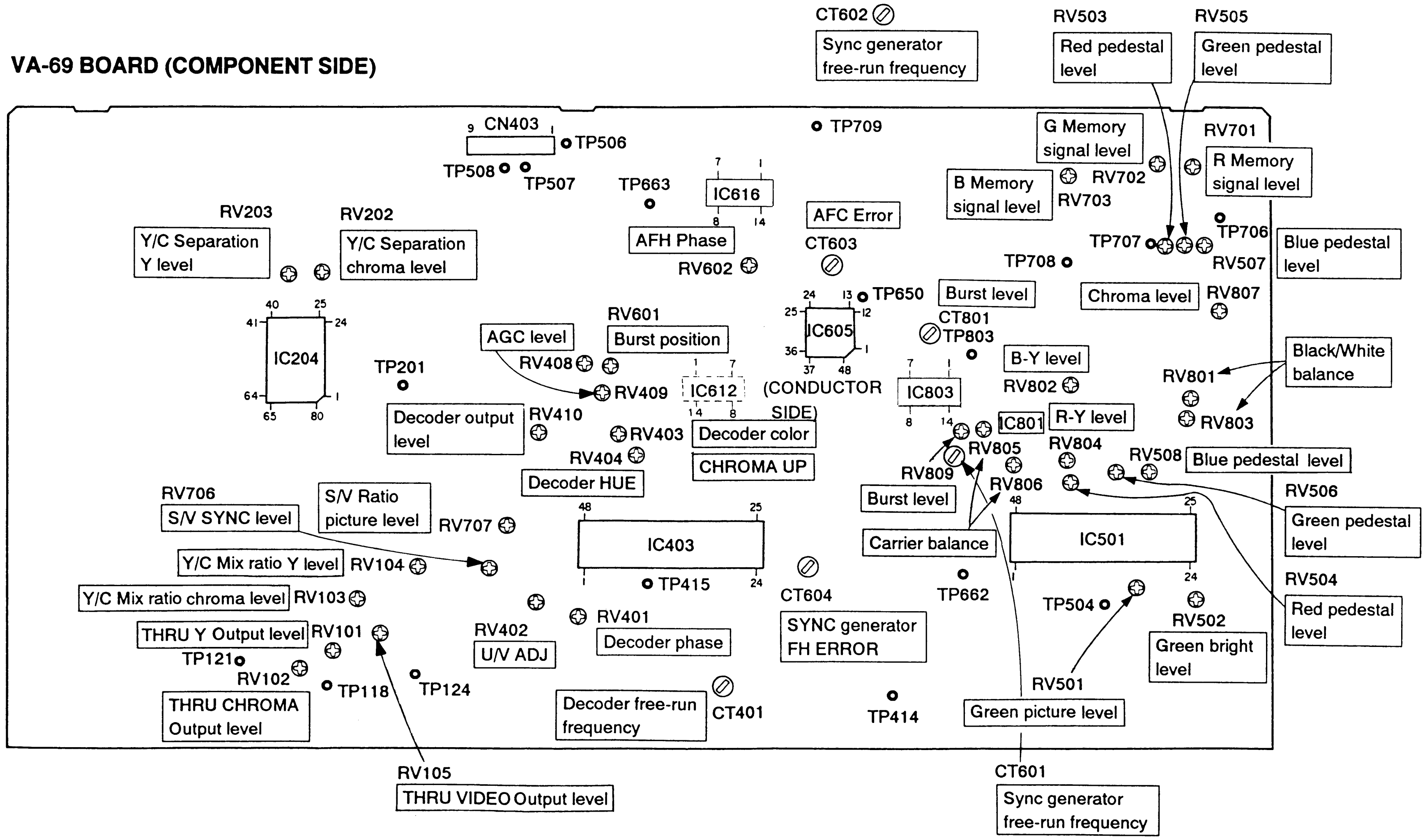
HC-10 BOARD (COMPONENT SIDE)



MC-80 BOARD (COMPONENT SIDE)


W2
CC303
CC203
CC103
RV401
G Channel D/A output
IC508
CC518
IC513
CC508
CT501
OSC

VA-69 BOARD (COMPONENT SIDE)


CT602
Sync generator free-run frequency
RV503
Red pedestal level
RV505
Green pedestal level
CN403
TP506
TP508
TP507
TP709
G Memory signal level
RV701
R Memory signal level
RV702
B Memory signal level
RV703
TP663
IC616
AFC Error
RV203
Y/C Separation Y level
RV202
Y/C Separation chroma level
AFH Phase
RV602
CT603
TP706
TP707
RV507
TP708
Blue pedestal level
TP650
Burst level
Chroma level
RV807
CT801
TP803
IC605
IC204
AGC level
RV601
Burst position
RV408
TP201
RV409
IC612
(CONDUCTOR SIDE)
IC803
B-Y level
RV802
RV801
Black/White balance
RV803
Decoder output level
RV410
RV403
Decoder color
IC801
R-Y level
RV805
RV804
RV404
CHROMA UP
Decoder HUE
RV809
RV806
RV508
Blue pedestal level
RV706
S/V SYNC level
S/V Ratio picture level
RV707
IC403
Burst level
Carrier balance
IC501
RV506
Green pedestal level
Y/C Mix ratio Y level
RV104
Y/C Mix ratio chroma level
RV103
TP415
CT604
TP662
TP504
RV504
RV401
RV502
THRU Y Output level
RV101
RV402
Decoder phase
SYNC generator FH ERROR
Green bright level
Red pedestal level
TP121
RV102
U/V ADJ
TP118
TP124
THRU CHROMA Output level
Decoder free-run frequency
CT401
TP414
RV501
Green picture level
RV105
THRU VIDEO Output level
CT601
Sync generator free-run frequency